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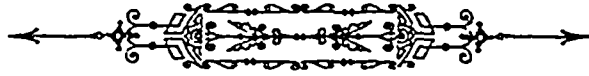


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Vol. IV, No. 4—New Series.

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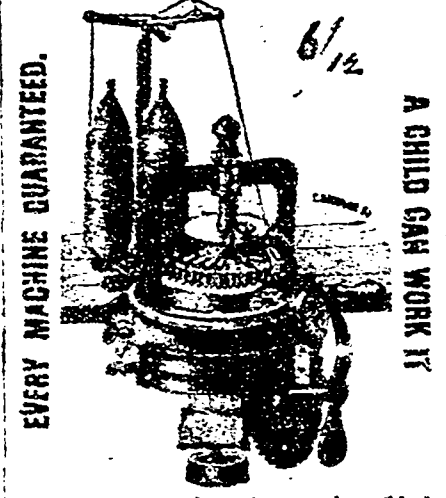
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RURAL NOTES.

SUCCESSFUL farmers are those who consult the requirements of the markets. The taste of the buyer has to be consulted by the seller.

THE results of experiments at agricultural stations and model farms are valuable, but the recorded experiences of others seem mainly to stimulate the good farmer to experiment and investigation for himself, on his own land.

THE annual value of the hay crop of the United States is said to be \$250,000,000. The value of Ontario's crop, reckoned at \$10 per ton, is about \$40,000,000, and this is nearly one-half the annual yield of all the gold mines in the world.

As a general rule skim milk can be more profitably fed to pigs and poultry than to any other live stock of the farm. It abounds in albumen, from which the white of the egg is formed, and therefore is the proper kind of diet to produce eggs.

Now is the time to give ewes with lamb a daily supply of roots and the best hay. If they have this, with plenty of exercise, they will not need grain until the lambs are two months old. Great care should be taken not to expose the lambs to storms or cold winds.

WHERE grass seed was sown last fall the field should be harrowed and rolled as soon as the ground is hard enough to admit of it. This is the best way of treating grass which has been heaved by winter frost, and it also puts all small stones out of the way of harm to the scythe or mower knife next summer.

THE sun, the wind, the rain and the frost are ever carrying on Nature's great chemical work of making food for plants by pulverizing the soil and decomposing the vegetable and mineral matter in it. To pulverize the soil is consequently the great object in ploughing, cultivating or harrowing it, and if the land be not dry when worked the working of it is vain.

IN some German vineyards the experiment has been tried of soaking the stakes used for trellises in sulphate of copper, to prevent rotting, and it has been found that wherever these stakes were used the vines were free from mildew throughout the season. If this remedy is found to be effective, it will be one of vast importance to vineyardists, it certainly deserves to be tried.

THE prevalence of the pear blight has given the tree peddler a new chance for his operations. He is abroad with varieties of the Chinese and Japanese pear, which he claims to be blight-proof and which he offers at \$1 to \$2 per tree. Set the dog on him at sight. There is not a Chinese or Japanese pear tree worth cultivating, except as a curiosity, or for ornament.

ANIMAL manure is to be valued by the food consumed, much more than by the nature of the animal itself. Straw fed manure, for instance, is poorer than straw; but manure which is the product of clover, hay, roots, grain or oil-cake is

worth almost as much as the food itself is in money. There is neither economy nor profit in feeding cheap stuff to the cattle. It is a loss to the cattle and a loss to the farm.

REFERRING to the New York State Experiment Station at Geneva, which was established in 1882, Governor Hill said in his message to the State Congress that it is rapidly developing its utility and acquiring the confidence of those practical farmers who have heretofore doubted its usefulness, and that it bids fair to greatly improve and benefit the whole farming interests of the State.

BEN. PERLEY POORE says the Baldwin apple had its origin in Wilmington, near Boston, more than a century ago, on the farm of a man named Butters; hence for a time it was known as the Butters apple, and as the fruit was much relished by the woodpecker it was also called the Woodpecker apple. Afterwards, it was cultivated by Col. Baldwin, of Woburn, and by that gentleman's sons it was brought into general notice as the Baldwin apple.

BETWEEN two and three thousand self-binding reapers were sold to the farmers of this Province last year, and about twice as many will be made for the coming harvest. This large increase in the demand enables manufacturers to produce the machines at a much lower price than they could afford to do three or four years ago. It is not merely that there is increased competition among makers, but in the building of a large number there is opportunity for greater economy in the work.

No ploughing should be attempted where the ground is so wet that it turns over in compact masses. Quicker germination, a more rapid growth and a larger crop are obtained by waiting until the land is dry enough to crumble when turned up by the plough. If a field is intended for some early crop, and is not dry enough to admit of timely working, it is better to reserve it for a later crop; then you know that such a field is in need of underdraining, and by this improvement you may make it workable at as early a period as the driest piece of land on the farm.

IT is sometimes said that the interests of farmers receive more encouragement and fostering aid from our Provincial Legislature than those of any other interest. Considering their importance, we do not think they do by any means. The property of farmers pays the bulk of the country's taxes and is the chief source of our productive wealth; besides, the farmers as a class add the least to the criminal and charitable expenses of the localities where they reside, and while there are many schools and colleges in the country for the training of men for business or professional life there is only one which gives special instruction in farming.

APPLE trees should be planted about two rods apart, and at this distance forty trees can be planted to the acre, each having an area of 1,024 square feet. At the very moderate yield of three barrels per tree this would give one hundred and

twenty barrels per acre, and it is a sorry state of the market now-a-days when sound and carefully packed apples of good varieties do not fetch a dollar a barrel. With the present and probable future demand for Ontario grown apples in the English markets, the man who makes a wise selection of varieties, and who cultivates his trees skillfully cannot fail to make a profitable investment of his capital and labour.

INVESTIGATIONS conducted at the Houghton Experimentation Farm show that yellows in peaches is caused by a fungus parasitic plant of the same class as those which produce disease in animals. The germs of this fungus live and grow in the sap, disordering and devitalizing it as they do the blood of animals. The result of the experiments made seems to indicate that the best kind of treatment is the use of potash fertilizers, which, it is claimed, will not only prevent the disease, but will cure it when not too far advanced. Peach growers are advised to make liberal use of lime and potash—the best form of these fertilizers being superphosphate of lime or fine bone, and muriate or sulphate of potash.

IN a letter to the *Toronto Mail*, Mr. Vallancey E. Fuller, of Hamilton, offers some good practical suggestions to butter-makers who would make butter at a profit. (1) Test the cows of the herd from time to time by churning the milk of each cow separately, (2) Keep one day of every week a record of the milk yield of each cow and the quantity of butter made from it; (3) having ascertained which cows are non-paying, sell them off the farm, and breed the best ones to a pure bred bull of stock, well established as butter-makers. The common cows of this country, Mr. Fuller says, require on an average twenty-five pounds of milk to produce one pound of butter; but by grading up the stock to half or three-quarters pure blood, the farmer can raise a herd of dairy cows which will give an average of a pound of butter to every sixteen pounds of milk, without any reduction in the quantity of milk yielded or increase in the cost of breeding.

WE are sorry that we cannot congratulate Mr. Carnegie on the spirit in which he criticized the Agricultural College. Mr. Carnegie is personally a very worthy and estimable gentleman; but he makes a mistake in carrying party politics too far in the discussion of some matters that deserve to be treated as above and apart from any political considerations. It may be that in some matters of detail, the management of the Model Farm is susceptible of improvement, but the criticism of any such matter should be made in a way to show that the critic honestly desires the improvement of the institution. The Agricultural College deserves and should receive the encouragement of both political parties; and as neither party can overlook any faults in its working without incurring the censure of the farmers of the Province, so neither party can attack it unjustly, and hope to escape the same censure. As a clear-headed and thoroughly conscientious business man, we have no doubt that the Commissioner of Agriculture will keep a watchful eye over the business affairs of the College, and that expenditures will be kept within reasonable bounds.

FARM AND FIELD.

FOR THE RURAL CANADIAN

WALKS AND TALKS AMONG THE FARMERS. NO. XI.

Two red-letter days at the Ontario Agricultural College, crowded full of "walks and talks," especially the latter, supply more than sufficient material for this paper, even though it should be somewhat longer than usual. The "Agricultural and Experiment Union," as it is called, was in session. This organization is composed of past and present officers, students and ex-students of the College. It now comprises a membership of over three hundred. A convention is held annually extending over two days, at which questions of interest pertaining to agriculture, and matters connected with the welfare and usefulness of the College, are discussed. These meetings are open to the public, and ought to be much more largely attended than they are by the farmers; they would be if they were properly alive to their own interests. On the occasion now referred to, the convention was chiefly made up of students and graduates, with here and there an older head or a grey-beard sprinkled in among the "boys," who so greatly preponderated.

The idea of such a union, by whomsoever organized, was a wise and happy one. In College friendships are formed which it is well to keep up in after years. There is much of unavoidable isolation about farm life, and whatever tends in any degree to counteract it is valuable. It was pleasant to see with how much cordiality old class-mates greeted one another, and how happy they seemed to be in each other's society. Evidently, there was much of the sympathy that is born of a common pursuit, and it was particularly interesting to hear the details of experience, whether with success or failure, and to note the eagerness with which these narrations were heard by the young brotherhood of expectant or newly-fledged farmers, once more assembled in the halls of their Alma Mater. Attachment to the institution, already existing, is thus fostered and increased. Much that transpired during the recent meetings of the Union indicated a warmth of love to the College which resented unmerited attacks on it from any and every quarter, while the question of its future prosperity, which came up in various forms, roused more enthusiasm than all the other subjects of discussion that were presented to the assembly. The Ontario Agricultural College has a strong and increasing body-guard of defenders in the members of this Union—a fact which augurs well for its future.

The programme embraced papers as follow:—"On the Ontario Agricultural College," by C. H. F. Major, an ex-student; "Relation of Science to Agriculture," by Professor Panton; "Report of Experiments," by a Committee of the Union; "Clover and its Uses," by Dr. Hare; "Bees," by R. F. Holterman, an ex-student; "The Points of Horses and Breeds," by Professor Greenside, V.S.; "The Dairy of Canada," by Professor Brown; "Higher Education of Farmers," by J. L. Campbell, an ex-student. All these papers were forthcoming, duly read, and thoroughly discussed, with the exception of Dr. Hare's, that gentleman being unable to take the part assigned him, owing to illness in his family. The papers of Messrs. Major and Campbell went very fully into the merits and demerits of the College, and the discussions which arose upon them led to the adoption of a series of resolutions asking for certain changes in the rules of the institution, and for the appointment of an Advisory Board to aid the Commissioner of Agriculture in its manage-

The first change sought is the requirement of at least a year's experience of actual work on the farm as a condition of admittance to the College. At present the students consist of two classes:—Farmers' sons who are thoroughly familiar with farm work, can plough a straight furrow, or handle a hay-fork or dung-fork deftly; and young men from towns and cities who know nothing at all about agricultural manipulations. It was argued with much force that young men wholly destitute of experience could not appreciate the scientific instruction given at the College, did not know their own wants, could not judge of their adaption to agricultural pursuits, and were much more likely to turn away to some other occupation when through with their course of instruction, than those who had already gained some practical knowledge, learned wherein they were deficient, and tried farming sufficiently long to judge as to making it a life pursuit. The proposed change was opposed by some of the English students, who thought it a hardship that a young man just out from the old country should be obliged to spend a year on some Canadian farm before being eligible for admission to the College. *Per contra*, it was urged that none needed such a rule more than young men just arrived from Britain, owing to their ignorance of the country to which they had come; and that so far from the proposed rule inflicting hardship upon such, it was doing them a kindness, as they would study to much better advantage after a year of life on a Canadian farm. This view was upheld by two or three students who had spent a year or two at farm work in this country before entering the College.

The second change sought is a reduction in the hours of manual labour required of the students. At present, five hours per day is the rule. There was a pretty general feeling that this is too long, and that part of the time could be better employed than at farm work. Some complaints were made that insufficient instruction is given to students unfamiliar with farm work, that they are not shown how to do things, but are left to find out for themselves after many awkward attempts and failures. Another grievance is that they are kept too much at mechanical tasks requiring no skill, and only involving monotonous hard work, such as digging, forking over manure, hoeing, and the like—that, in fact, they are treated more like labourers, out of whom it is desired to get as much work as possible, than like students who are to be taught and trained. Complaint was also made that owing to the number of hours devoted to labour, there was no time for private study and the reading even of text-books. A resolution looking to the reduction of the manual labour one-half was adopted with entire unanimity, no dissentient voice or opposing hand being raised in regard to this matter.

The most important point broached was a method for taking the College out of the arena of party politics, and, after much discussion, the conclusion was reached that the only step at present practicable in that direction was the appointment of an Advisory Board composed of practical farmers belonging to both political parties, with whom the Commissioner might consult, and who would be, to a certain extent, responsible for the management of the institution. It was felt by all that the attacks made on the College from time to time with a view to the manufacture of political party capital are damaging to the institution, and that it should, if possible, be taken out of the hands of the politicians, and put into those of practical farmers. In the absence of an endowment, and so long as the College is dependent for

it is idle to talk of taking its management out of the hands of the Government of the day, and committing it to a non-political body. But surely it is quite practicable to have an Advisory Board, composed of members of both political parties, on whose recommendations the Commissioner and the Government can act, and so be relieved to a considerable extent from exposure to party criticisms. It is understood that the present Commissioner has expressed a desire for an Advisory Board of practical farmers, because of his own want of agricultural knowledge and experience. The College does not lack friends among members of the party now in opposition, and there should be no difficulty in finding men of both political schools who will work harmoniously together for the advancement of its best interests. It is true that the Provincial Exhibition has been managed. The Board of Agriculture and Arts has been composed of leading agriculturists of both political parties. Men, the antipodes of each other politically, e.g., Mr. Rykert and the late Senator Christie, have worked side by side for years on that Board, and the result of this arrangement has been that the Provincial Exhibition was never made the foot-ball of party politicians. It is believed that a similar Board would allay, if not wholly remove, the political rancour which has assailed the Agricultural College; and while it is desirable that this institution should some day be put on a basis of independence as complete as the Provincial University, it is plain that this cannot be done until its investiture with an adequate endowment. On this third point, the Convention was entirely unanimous.

The discussion on bee-keeping which followed the reading of Mr. Holterman's paper was animated, and indicated much interest on the part of the students and ex-students. Bee-keeping is the only agricultural interest which does not receive attention at the College. In the original plan of the institution it was provided that "there shall be a Bird and Bee Department," but this part of the outline has not yet been filled up. In view of the importance bee-culture has assumed of late years, and the vast addition that might be made to the national wealth if it were properly installed as one of the industries of the farm, it seems very desirable that this lack should be supplied in some way. The students are anxious to obtain practical instruction in apiculture. This desire was so manifest that President Mills intimated his readiness to have a Beekeepers' Convention held within the college walls at an early day, and it is hoped that this arrangement will be found to be practicable. But, sooner or later, there must be an apiary at the institution, and thorough instruction given in this as well as in other branches of practical agriculture.

A social reunion on one of the evenings of the convention, and a literary entertainment on the other, were enjoyable occasions. At the present time, the College seems to be going on efficiently in its various departments; there are good order and discipline among the students, and the relations between them and the officers of the institution appear to be all that could be desired. Judging by the speeches at the social gathering, nearly all of which were made by students, ex-students, and officers of the College, also by conversations with one and another, the writer was most favourably impressed with the condition and prospects of the College, which he has watched with deep interest from its inception until the present time. Without disparagement to their predecessors, the students now in course of

as to physique, general intelligence, and mental ability. They seem to appreciate the nobility of agriculture, and manifest a determination to raise their profession to an equality with any and every other, which is highly commendable. Spite of all opposition, the College is growing into public favour and, as it demonstrates its value and usefulness by turning out high-class farmers, will continue to become more and more popular, until one such institution, however expanded, will be found insufficient for the wants of the Province of Ontario. I shall not live to see the day, but it will come, when every county in this Province will have such an institution, and be justly proud of it.

There were "walks and talks" not only within the college walls, but in the barn-yards, cattle-stables, sheep-sheds, and other appurtenances of the College. At the close of this already long paper, these must be dismissed in brief. The stock looks well. The recent importations form a very valuable addition to this department, especially the Hereford and Devon bulls. The Devon is the most completely typical representative of the breed I have ever seen anywhere, and I predict a career of distinction for him. The feeding cattle repaid study and close observation, in connection with the experiments now in progress. A large number of early lambs were to be seen, for the most part doing uncommonly well, and showing that, even in our rigorous climate, and during an unusually severe winter, lambs can be had without any more than the average spring casualties. An inspection of the siloes was not calculated to inspire one with much admiration of ensilage. The ensilage was perfectly preserved, and looked as green and fresh as when put into the siloes, but the stench was horrible, and suggestive not only of "saur kraut," with which it has often been compared, but of "Limburger cheese" as an accompaniment. I should much prefer well-cured clover, and so, I think, would all sensible cattle and sheep.

W. F. C.

THE ORIGIN, FORMATION, AND CLASSIFICATION OF SOILS.—WITH SPECIAL REFERENCE TO ONTARIO.

BY PROF. J. HOYES PANTON, M.A.

Soil may be defined as the loose material covering rocks from which it has been principally derived, and the source from which plants obtain a large proportion of their food. Some have defined it as the earthy matter in which plants grow.

It is a sort of storehouse for plant supplies, and a laboratory in which some of the most interesting chemical changes take place in the preparation of compounds suitable for plant-food.

Soil is largely made by the disintegration of rocks immediately below it, in it, and also to some extent of those at a distance.

These, together with substances derived from the decomposition of animal and vegetable remains, which have existed from time to time upon it, constitute the soil of our fields.

The examination of soil, especially in Ontario, generally shows:

1. Numerous stones bearing a marked resemblance to rocks lying in a northerly direction from the place under examination. These may be of two kinds, (a) more or less hard and crystalline; (b) fossiliferous and generally limestone.

2. Stones of the same nature as the rock below, usually limestone, bearing fossils.

3. Ground-up material derived from rocks of which these boulders are fragments.

4. Organic matter, largely derived from the decomposition of plants.

Rock is reduced to the disintegrated condition by various agents, chiefly—

1. The atmosphere, by the action of its oxygen.

2. Frost.

3. Rain, acting chemically on carbonates, mechanically dissolving the soil, and carrying it in different directions.

4. Vegetable growth and decay.

5. Some have credited the formation of soil in several cases to earth worms bringing particles to the surface and admitting air and water into the soil. From what has been remarked, it will be seen that the composition of a soil depends upon the nature of the rocks below and those of regions at a distance.

In Ontario the principal series of rocks represented are:

1. Laurentian, forming a great belt from the lower side of the St. Lawrence north-west to the Arctic regions. Along the river it lies between Brockville and the vicinity of Kingston, extending through the back townships of Frontenac, Addington, Hastings, Peterborough, Victoria and Simcoe, and thence to the North-West. These are among the earliest known rocks, and seem to have undergone great changes since first formed. They are usually hard and crystalline, presenting a much disturbed condition, and frequently rich in minerals. The term metamorphic has been applied to them on account of the change from their original form. This likely resulted from the action of heat, moisture and pressure. The following table will give some idea of the principal constituents of these rocks, and their chemical composition:

Rocks.	Silica.	Alumina.	Potash.	Soda.	Lime.	Iron.	Magnesia.	Carbonic Acid.	Phosphoric Acid.
1. Gneiss.—									
Quartz,	100								
Felspar,	66	19 16	1.45		traces	27			
Mica,	47	36 10				4			
2. Limestone Cryst.					56		14		
3. Dolomite, "					32		22 46		
4. Iron,						100			
5. Hornblende,	1 11 6				13	traces	18		
6. Apatite,					55			42	

2. Silurian, extending from Kingston to the western side of Ontario, in the vicinity of the county of Welland, to Lambton. These rocks are chiefly limestones, both carbonate and sulphate, dolomites and sandstones.

3. Devonian, in the counties around Lake Erie, and the County of Lambton, composed largely of limestone and argillaceous shales.

These rocks at a distance and beneath the soil of our fields contain the very ingredients necessary to plant life and were disintegrated by agencies about to be described, and thus formed into a finer state of division. The deposits which Ontario received after these, were not laid down till thousands of years afterwards.

A great blank occurs in the geological history of Ontario after the deposition of the Silurian and Devonian rocks. While other parts of the world were receiving large additions, nothing was being added to our rocks. But throughout long ages they were being more or less disintegrated by the effects of frost, rain, wind, and water, and some soil formed which afforded a starting place for rudimentary forms of plant life, capable of growing under such adverse conditions. But towards the close of what is known as the Cretaceous Age in geology, a great change took place in the climate, hitherto of a semitropical, if not a tropical nature.

In the beginning of the next age phenomena occurred which played an important part in the

formation of soil throughout this Province. At this time boulder clays, sands, graveles, and loose rock material were scattered over the surface. The climate became of a more Arctic character, immense glaciers, rivers of ice, having their origin in regions to the north of us, wended their way to localities farther south. These immense masses of ice as they passed over the rocks smoothed the rough surface and ground up much of the rock below them. As they moved on, fragments would be continually falling upon them from the sides of ravines through which they passed, and gradually become imbedded in the ice; and thus by their weight and motion, together with those imbedded stones, the abrading power of the glaciers would be immense.

The glacier may have been many miles wide and thousands of feet thick. Where it ended great heaps of ground rock, pebbles, and rounded fragments, formed in its course, must have collected, and as it receded back, by thawing away at its extremity, the materials deposited would be scattered over a more or less extensive district. A change in climate again occurred and the glacier or glaciers passed away and left a rich legacy to the tiller of the soil, viz., all the deposits which they had formed and collected during the one hundred and sixty thousand years of their existence. This, improved by the addition of organic matter derived from the plants which have grown upon it from time to time, is the soil now covered by verdant pasture lands and fields of waving golden grain.

The boulders scattered over the surface of Ontario are silent monuments of these great scenes.

In the early part of the melting, the water from the glacier would be less, and coarse materials would be deposited. At this stage the boulder clays were deposited, while coarser materials dropped farther back, e.g., clays to the south and west of Ontario known as the "Erie clays," while farther north are the boulder fields of Owen Sound. These stratified deposits were laid down, along valleys and flooded streams, and in and about lakes.

River and lake deposits are much alike, except that the latter are of a more clayey nature and usually levelled off on the top, e.g., western peninsula.

Clay beds were the prevailing kind about the lakes and in the river valleys, where the waters moved slowly.

It has been inferred from certain facts in connection with the deposits of Western Canada that the region of the present great lakes was an immense body of water extending to Ohio, Illinois, etc., and that it emptied into the Mississippi, and thus formed an outlet in the opposite direction to the outlet of our present lakes.

Remembering the course and origin of the glacier, the material which it carried would be chiefly those derived from the rocks to the north. Such is the case, for the boulders in our fields are foreign to the rock below and are of the same composition as the metamorphic rocks already referred to, and also in some cases resemble fossiliferous rocks in regions to the north.

Further, the rocks below the soil, when uncovered, generally present an abraded surface, with well-defined markings, (striæ), indicating some great grinding mass from the north, which scratched the surface as it glided southward. See shores of Lake Erie near Welland, also at Grimsby. Such results are now observed in regions where glaciers exist. See Alps.

Since these wonderful scenes took place, the deposits in many places have undergone marked changes; but, taken as a whole, these facts seem to bear out the view generally adopted regarding

the origin and formation of soil in many parts of the world, and that much of it resulted from changes which occurred in the Glacial Period of geological history. Regarding the classification of soils, there is little uniformity; but it is frequently based upon the amount of clay, sand, lime, or vegetable matter present. The following may be taken as a classification on this basis:

Clay soil.....	90-100 per cent.	sand.
Sand soil.....	90-100	" sand.
Loam soil.....	50	" clay and 50 sand.
Clay loam.....	75	" clay and 25 sand.
Sandy loam.....	75	" sand and 25 clay.
Marl.....	5 20	" lime.
Calcareous.....	over 20	" lime.
Peaty.....	large	" vegetable matter.

TOP-DRESSING GRASS LANDS.

In this country too little attention is given to the importance of top-dressing fields that are seeded down with grass. Indeed, the greater portion of the farmers, having put the land into grass, consider that sufficient, thinking they are giving the land a rest. Perhaps no greater mistake than this could be made; for almost invariably before it is thought advisable to put the land into grass, it has been cropped and cropped, till nearly all the available plant food has been taken out of the soil, which is then considered good enough to grow a crop of grass. If the land then yields a ton or a ton and a half of hay to the acre, it is looked upon as satisfactory, although it might have been a little better. Now all this could be vastly improved at a trifling expense, by top-dressing the meadows.

This should be done as early in the spring as it is possible to haul a waggon over the land without cutting it up with the wheels. Good, well-rotted barn-yard manure, taken from the bottom of the pit, cannot be excelled. It should be spread lightly and afterwards gone over with a brush harrow to serve the purpose of breaking and fining the manure; and also to more evenly distribute it. If this plan is considered too troublesome, or the supply of barn-yard manure too scanty for any to be spared for top dressing, use some of the well-known patent fertilizers. You will find that it pays to do so.

In England, where the farms are so heavily rented, the farmers find it profitable to pay high figures for fertilizers for top-dressing, Guano being most extensively used for the purpose, although sold at a very high price. Our farmers can very easily obtain a large supply of Guano, on their own premises, by simply keeping their poultry in suitable premises and having the droppings cleaned out regularly. This should be mixed with plaster or wood ashes and put into barrels and kept under cover till wanted. It will astonish any person to see the large quantity of valuable manure that can be made in twelve months by a very few fowls.

CARBOLIC ACID.

As a deodorizer and disinfectant, in fact as a general purifier, carbolic acid stands unrivalled. Until its virtues were discovered, we were often at a loss to know what to use for this purpose. When properly diluted and prepared, it is good for sores, and for the bites of insects, neutralizing the poison. In the proper management of poultry it plays a very important part, and when once tried its use will never be discontinued. When sprinkled over the floor of the hen-house after each time it has been cleaned, it will remove any bad odours and will purify the house. It can be rubbed on the roosts and roosting benches and sprinkled (moderately) in the new-made nests, in all cases being very beneficial in ridding the house of any unhealthy odours and in disturbing and driving away the insect enemies which cling so persistently to both the bodies of the poultry and to the inside of the house and their nests.

WHITE BELGIAN OATS.

During the past year there have been many varieties of oats competing for popular favour. The accompanying illustration represents a variety which has proved itself well adapted to this country. Thorough and careful trials by some of our leading Ontario farmers, as well as Joseph A. Simmers, seedsman, of Toronto, show it to be



early, productive, and of extraordinary weight. White Belgian oats is far ahead of any variety of oats grown for the following reasons:—

(1) The quality of this variety for feeding purposes and manufacture of oatmeal, is such that no other variety can equal it. The thin husk, for the manufacture of oatmeal, and the very nutritious qualities of the kernel, place it at the head of every variety for feeding stock.

(2) The stiffness of the straw gives this variety another great advantage over all others; for, notwithstanding the changeable weather which we have before maturity of oats in this country, this variety has not been known to lodge in any case.

(3) Its early maturity is another point in its favour, ripening, as it does, ten days earlier than any other variety, which quality, of itself, places it at the head of the list.

(4) The enormous yield of this oat has led farmers

to doubt the fact that it does yield from 12 to 150 bushels per acre; but when we give a clipping from a practical farmer, who grew this variety to a large extent last season, it will convince the most sceptical on this score. We here quote the following report:—

"DEAR SIR,—The White Belgian oats I sowed last spring, on about one fourth of an acre of loam land; I have harvested an enormous crop of heavy oats, which must weigh nearly fifty pounds to the bushel, and I presume if I had sown an acre I should have harvested two hundred bushels to the acre. I regard them as the best oats now raised. The straw is strong, consequently they do not lodge. They are by all means the oats for farmers to grow. Yours, etc., —"

Numerous other testimonials were handed to us but space will not allow us to enumerate.

STABLE MANURE.

For the treatment of this most important article, we have a multitude of plans to suit the various conditions of soil and circumstances. Though some may still err by lack of knowledge, or by sticking to old methods, yet a great many are forced to follow a plan which they know could be improved if they had the opportunity.

On clay soil, such as we have in Huron, there can be no doubt that manure put in the land in its coarse state has a decided advantage by tending to open the soil, but there is some danger in a dry season of producing too much heat in drills by using strong unfermented manure, while in a wet season the heating would be a decided advantage. Several times seed potatoes have been wasted in the drills when dropped over a heavy coat of unfermented manure, but never when the seed is first dropped and the manure placed over them, because fermentation sets in immediately after the drills are covered and as heat always tends upwards it escapes before the stalks have entered the manure whose further decomposition attracts and holds moisture, a consideration in the development of a vigorous growth of stalks. When coarse green manure is ploughed into drills for turnips the same good effect is not apt to follow, as the land after mid-summer is generally quite warm and additional heat from below would be too much to start a good braud of turnips strong enough to resist the fly. For carrots or mangels when sown in April or early in May, it may be all right to put it in green or unheated, but when these are sown in June, there is danger of too much heat also. Where the pressure of spring work will admit and the land is tolerably fertile a plan that has given good results is to spread the manure on the ground and plough it lightly in, running the harrow over it and letting it lie till early grain has been sown, and then work the ground well and finely before drilling for the roots.

Many readers of THE RURAL will say all manures should be thoroughly rotted before they can become food for plants. Very true. Doctors differ; so do soils and farmers. What killed the tailor cured the blacksmith. To put coarse or green manure into light sandy soil, already too light and warm, renders it more so, thereby ensuring a missed crop, while in stiff or clay loam it would be just the right thing to warm and loosen the soil. The heating is what we want to get rid of without loss. If we had plenty of spare time, we could do it all right, but with farmers it is not what we should do as much as what we can do. Not one in a hundred can afford to have a cellar or shed for manure; and if he had, it would take an able-bodied man sixteen hours a day to take care of the manure from twenty-five head of cattle and horses to prevent waste, and he might not even then be entirely successful. No one can afford to heat manure in summer in the open air, indeed, it is doubtful if it will pay to keep manure over summer on any account, unless it be an old straw stack which cannot occasion much loss. To get heating started in winter, I have succeeded without much extra labour in this way. The manure gutter is large enough to hold five or six days' manure where the liquid and solid are dropped together in a water tight bottom of clay. Here litter, solids and liquid, is evenly mixed from neat cattle, and when a quantity, say about three waggon loads, has collected, the foundation of the heap is laid first in the shape of a cone, not tramped or levelled. The first snow fall covers it, the mercury being below zero frost penetrates about six inches into the pile. Build an addition on one side in the same way four or five times; never mind clearing off the snow or breaking the crust. But when I wish to apply the heat, I spread a fresh layer of straw about four feet wide, the length of the base of the cone, keeping the outside nearly plumb, tramping lightly around the outside and on top. As the finer scrapings are put on throw a little snow over the top, if a snow storm does not come immediately. In four or five days, heating begins on that side, unless snow falls frequently. The scoop shovel must be used to keep the newly built part covered until the next layer is built when most of the trouble is over. The heat gradually spreads, melting the snow and crust on the pile first made, and prepares a gently fermented manure heap without much waste where snow falls regularly, or a drift is at hand. More anon.

Esmondville, Feb., 1885. M. McQuade.

A Notable Arrest

C. H. OBERBECK, Deputy Sheriff, St. Louis, Mo., in 1882 took Warner's SAFE Cure for a very severe kidney and liver complaint; he had lost 75 pounds in weight under the doctor's care. Five bottles of Warner's SAFE Cure arrested and cured the disease, and December, 1881, he wrote, "I now weigh 260 pounds and never felt better in my life. I recommend Warner's SAFE Cure."

STRIKE from mankind the principle of faith, and men would have no more history than a flock of sheep. --Bulwer.

Text for a Sermon to Everyone.

REV. S. P. SMITH, (Universalist) of Marblehead, Mass., suffered for years from bilious attacks and all stones. In January, 1883, he was cured by Warner's SAFE Cure. June 2nd, 1884, he says, "There has been no return of the bilious troubles; I have not experienced the least pain or suffering since my restoration by Warner's SAFE Cure." Cure permanent.

MRS. CARRIED. T. SWIFT, Rochester, N. Y., for 25 years suffered from hereditary rheumatism, many times being utterly helpless, especially in warm weather. In July, 1883, she used a few bottles of Warner's SAFE Rheumatic Cure, and in January, 1885, another restoration to health was as complete as miraculous. Cure permanent. Try it.

IN all things throughout the world, the men who look for the crooked will see the crooked, and the men who look for the straight will see the straight.

Permanent Security.

T. O. LEWIS, San Francisco, Cal., Oct 28, 1881, says, "I have suffered for ten years with congested kidneys, and have passed stones ranging in size from the head of a pin to a pea, which caused strangury of the neck of the bladder. The best physicians in this city said I could not recover. I used four bottles of Warner's SAFE Cure, and got rid of four calculi." Writing June 23rd, 1884, he says, "The cure effected in 1881 was permanent."

I WILL be content of no pawn of heaven but Christ Himself; for Christ, possessed by faith here, is young heaven and glory in the bud --S. Kutherford.

A Woman's Happy Release.

MRS. E. F. DOLLOFF, Haverhill, Mass., Aug. 6th, 1881, said she had been cured of inflammation of the bladder by five bottles of Warner's SAFE Cure. December 24th, 1884, Mr. Dolloff wrote, "Mrs. Dolloff has never seen a sick day from that inflammatory disease since Warner's SAFE Cure cured her in 1881." Cure permanent.

FRANCIS L. DOW, assistant police marshal, Taunton, Mass., three years ago was cured of stone in the kidney and bladder by Warner's SAFE Cure, and in June, 1884, he wrote, "I have not seen a sick day since I began Warner's SAFE Cure and never felt better; have gained eighteen pounds."

WHILE we advocate the most fearless fidelity to right and righteousness, we most earnestly caution against vindictive harshness in spirit or in word. Be sure that the sweet spirit of perfect love tempers the heart and breathes in the words.

The Farmer's Heavy Debt.

A. WAY, Navarino, N. Y., in 1879, was afflicted with neuralgia, ringing sensation in his ears, hacking cough, pain in the back, irregular urination, dropsy, nausea, and spasms of acute pain in the back. Then came chills and fever. The doctor's gave him up, but after using 22 bottles of Warner's SAFE Cure, he said, "I am hale, hearty and happy." On June 29th, 1884, he writes, "My health was never better. I owe my existence to Warner's SAFE Cure," Cure permanent.

WHEN life is suffered to swing from one thing to another, without distinct purpose, when aims are so numerous that they result in aimlessness, and paths so broad that the goal is forgotten, the character is weak, the work is imperfect, and the life of but little value.

Haven't You Felt Just So?

ISAAC N. WOOD, Fishkill, N. Y., July, 1884, wrote, "It is two years ago last spring since Warner's SAFE Cure cured me. I was called a dead man but that medicine brought me to life. I take a few bottles every spring to keep me right." He was afflicted for 8 years with pains in the back, ending in kidney hemorrhage. Cure permanent.

"Wonders."

E. H. BECKWITH, Norwich, Conn., Dec. 18th 1884, stated, "I owe my life to Warner's SAFE Diabetic Cure; when I began its use I passed ten quarts of water daily, which contained 14 per cent sugar; after using seven dozen bottles my doctor pronounced the water free from sugar; it has

W. B. HAWKSHAW, Glanworth, P. O., breeder of Short-horn Cattle and full bred Shropshire Sheep.

THOMAS IRVING, Logan's Farm, Montreal, breeder of Ayrshire Cattle, Clydesdale Horses, Berkshire and Berkshire Pigs, and Leicester Sheep.

ALEXANDER BURNS, Maple Lodge Farm, Rockwood, Ont., breeder of short horn Cattle. Young stock for sale.

JOHN JACKSON, Woodside Farm, Alingdon, Ont., importer and breeder of Southdown sheep, Great Merino flock at Ottawa, and 11 prizes at the leading fairs in 1884, also short horns and Berkshire stock for sale.

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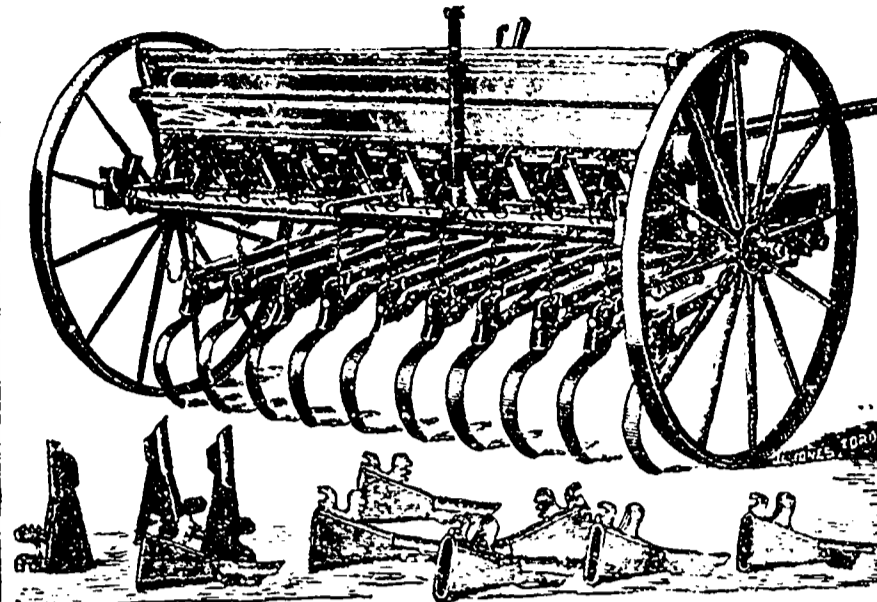
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AGENTS WANTED In every city, town and village to sell "VOICES FROM THE ORIENT." Apply to Box 17, Brockville, Ont.

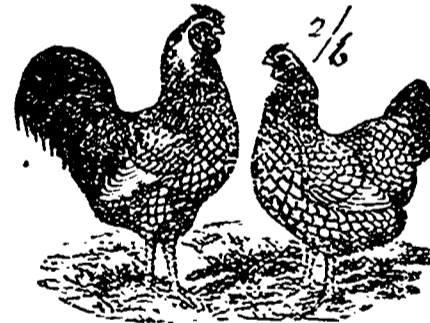
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THE GERMAN EGG FOOD Will largely increase egg production, strengthen weak and drooping fowls and promote the healthy growth of all varieties of Poultry. Trial package by mail, 4 lb. post paid, 40 cents. By express, 1 lb. 40 cents, 5 lbs. \$1.00. **POULTRY CUTS**, most any size, a very large and rare assortment for sale cheap. Send 25 cents for sample proof sheet. Address, CHAS. GAMMERDINGER, Columbus, Ohio. (Mention this paper.)

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HORSES AND CATTLE**BEST BEEF PRODUCING BREEDS AND METHOD OF FEEDING.**

BY MR. S. SCHELL, WOODSTOCK.

The measure of success achieved in any department or undertaking depends largely upon the plan pursued in the beginning, and especially is it so in reference to the breeding and feeding of beef cattle. It is an admitted fact that a well-bred animal, with the same care and food as given to a scrub, will grow from a quarter to a third larger, and command a proportionately higher price. Hence it is of the utmost importance for breeders to use every reasonable means within their reach to raise nothing but what would be of a fine type, and likely to attain to a high standard of excellence.

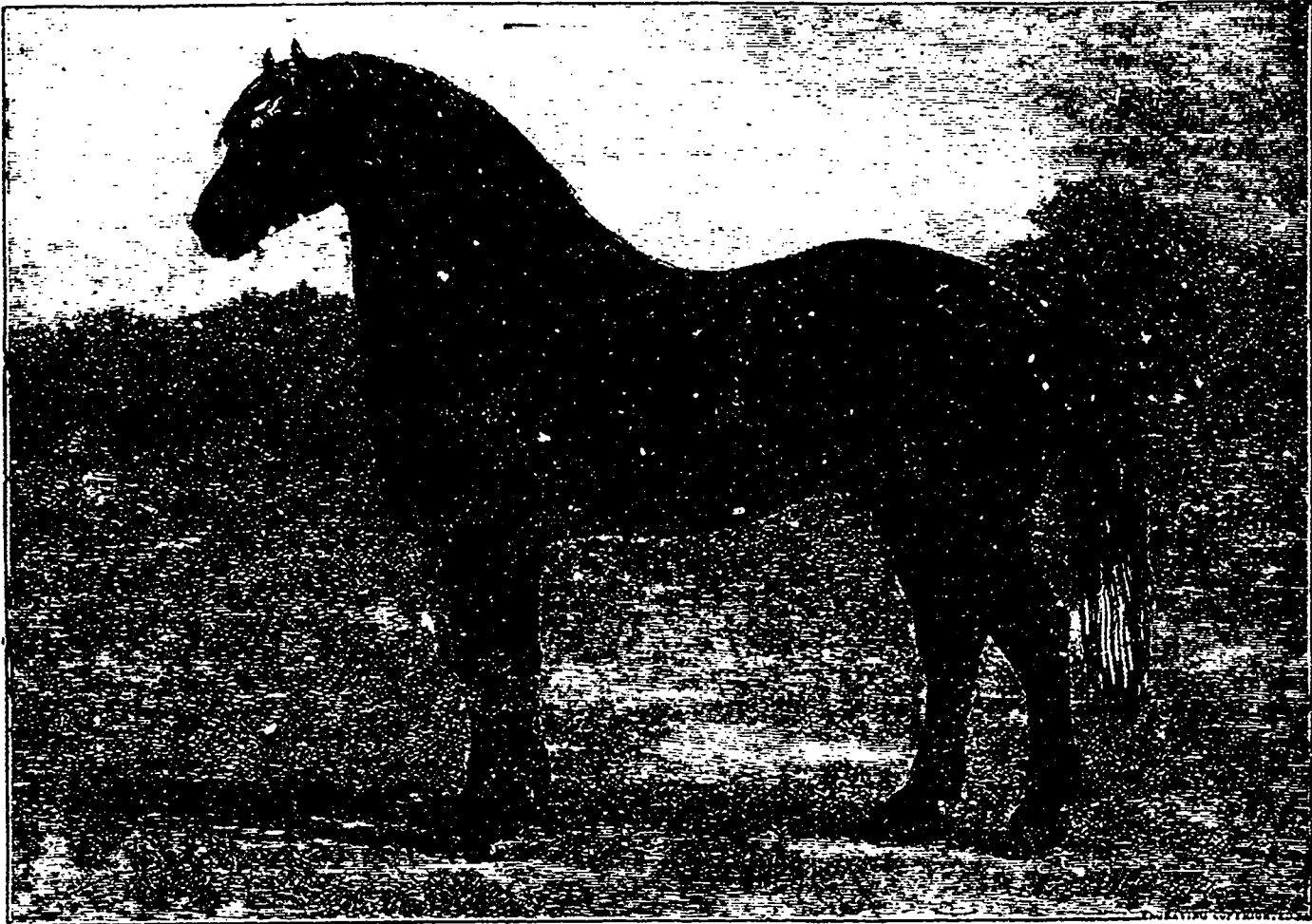
good size, bid fair to be no mean rivals of the Shorthorns.

The Galloways on account of their hardiness are raised extensively for the ranches in the West and North-West Territories. But few are bred and kept in Ontario as yet.

Admitting pure breeds to be the best, we are led to enquire how may the ordinary farmer of limited means, most successfully possess himself of those cattle that will approach nearest to the standard desired. Invariably, without an exception, nothing but pure bred males should be used, and only those possessing the qualifications or characteristics it is desirable to perpetuate. No animal, no matter how fine in appearance, is likely to produce stock equal to that from pure breeds. If the farmers of Canada, instead of allowing hundreds of the best bred animals to be shipped yearly to the States, would only retain

clover hay for wintering, with bran and pea meal mixed; also a few roots, if I have them. They should be kept in a box stall and given liberty to exercise themselves, to develop bone and muscle. By all means they should never be allowed to lose flesh, for every period of slow or defective growth is a clear loss.

Much has been said and written of late respecting the early maturity of cattle. My experience has been that cattle coming three years old are the best for winter feeding, and are therefore three years old when ready for shipment in the spring. The quality of the beef is also better than when younger, as there is a better admixture of lean and fat. In order to obtain the best results from the feeding of cattle in the winter, there are many important conditions to be borne in mind, and in the neglect of which the growth and condition of the cattle will be very materially



JUPITER 3692 (216).

[Recorded with pedigree in the Percheron Stud-Books of France and America]

A prize winner in France, and one of the six horses selected to be sketched by Rosa Bonheur. Property of Savage and Farnum, Island Home Stock Farm, Grosse Isle, Wayne Company, Michigan.

The question that naturally arises here is: what breed, all things considered, is the most profitable to raise?

From the data furnished us as the result of the numerous experiments made relative to the milk and beef producing qualities of the different breeds of cattle, we unhesitatingly claim the Shorthorns to stand at the head. As a rule they are good average milkers, while some strains rank quite high, which is a very important consideration, even where beef is the prime object sought.

In the fat stock show rings the Shorthorns have carried off by far the largest share of the honours, both at home and abroad. For years they have been, and still are, universal favourites. We should bear in mind, however, that some of the other breeds, although comparatively few in number, have frequently ranked first in competition with Shorthorns.

The Herefords on account of their fine, finished appearance are much thought of, while the Aberdeen Angus Polls, by their aptitude to lay on

fat evenly distributed, early maturity, and them at home, and banish the scrubs from their herds, till every farmer should be found raising stock that would be a credit both to themselves and the markets they might seek, the wealth of the country would be enhanced millions of dollars.

I will now refer briefly to the management of calves. While many breeders and feeders allow the calves to suckle their dams four or five months or even longer, I don't think it will ever be practised generally, and especially in dairying districts. In fact unless fitting up for the show ring, I think it too expensive a method to adopt, when the same nutritive value may be furnished at a far less cost. I would advocate weaning the calves when from three to four days old; and feed liberally with milk fresh from the cow until they are five or six weeks old, when skimmed milk with a little boiled flax-seed may be substituted. Chopped oats with the hulls sifted out we have found the most suitable grain to feed, for the first few weeks, when the sifting may be dispensed with, and a little pea or corn meal added, which should be continued all summer. I would refer

affected. Whether the cattle are raised or bought too much stress cannot be laid on the importance of handling only those that possess the characteristics of good feeders, which should be carefully studied to insure success. Without going into a minute description of the points of a good animal I would just observe that coarseness in any respect should be avoided, or those with long legs, lank or flat sides, as they are invariably shy feeders, and even if they get tolerably fat they will never have a good appearance. But those with wide, well-rounded shoulders, well ribbed up, with flank well let down and full, and withal broad and full across the loins cannot but prove satisfactory.

In referring to the method of feeding, I would just state that the kinds of food used must necessarily vary under different circumstances. That is, while some may find one kind of grain the most suitable for their farm, with others it may not do so well. Also roots may do well in some sections or seasons, and in others may be difficult to raise, or fail entirely.

Consequently no set rule or system can be laid down as being the most profitable to adopt in all cases. By the majority of farmers roots are looked upon as indispensably necessary to feed cattle profitably. Seeing an analysis of turnips to the effect that ninety per cent. was water, it became a matter of debate in my mind whether it paid to handle that much water for the ten per cent. of nutritive value that would be incurred in raising, taking off, and feeding out a crop of turnips. I also saw another analysis of bran claiming that the manurial value of a ton after being fed was \$6.

The outcome was an experiment in feeding without roots, and although the results were not always as satisfactory as we would like, but more particularly on account of the inferior class of the cattle sometimes fed, we are fully convinced after feeding thirty-five to forty-five head for the last three winters, that well-bred, thrifty cattle can be fed profitably without roots. I believe greater care is necessary, though, to keep up the appetite and a healthy thriving condition.

Of the various kinds of food I think bran by far the best substitute for roots, as it is of a laxative nature; besides, for animals that chew the cud, bulky food will give a larger percentage of profit than concentrated.

The hay fed must be well cured and sweet, and I would prefer a good mixture of clover with the timothy.

Pea or corn meal are by far the best fat producers of the different kinds of grain, but to give more bulk, and as a variety, I would prefer mixing an equal proportion of oat chop to be fed with the bran. I have discarded shorts or middlings entirely. Oil cake, if not too high in price, should be fed, but the last ton bought cost \$34, and with the oily substance pretty thoroughly extracted at that, making it rather a doubtful food. Salt should be fed regularly, but in small quantities, not more than a teaspoonful daily. Above all, a good supply of pure, fresh water is indispensable. A warm stable, properly ventilated, regularity in feeding, keeping the mangers clean and sweet, are all important considerations.

I am satisfied that well-bred steers will gain from 250 to 300 pounds with five months feeding. Three years ago three head were purchased in November, for \$100, all three years old past. Had some breed in them, but were thin in condition, and were estimated to weigh less than 1,100 pounds each. When turned out early in May they weighed 4,260 pounds. At the same time three others that were two years old past were fed, commencing in December, and estimated to weigh 1,050 pounds, weighed 3,900 pounds when sold. Equally as good gains have frequently been obtained, and in some individual cases even more.

At the prices realized for beef of late years, there is no question but that it pays well to raise and feed cattle, besides the profit accruing from the increased fertility of the soil. And who can fully estimate the extent of the profit in that respect?

The value of manure from a full-grown beast has been variously estimated at from \$15 to \$20 yearly. Such being the case, what folly it is to sell the coarse grains, hay, etc., when the market value may be fully realized in the form of beef. The larger the quantity of food consumed and properly digested by an animal, the greater will be the profit.

When we remember that it is only eleven years since the first experiment in exporting beef cattle to the old country markets was made, the most sanguine could not anticipate the marvellous increase and development of the trade that has taken place from year to year, until the shipment

Estimating these at an average of \$70 per head, we find it to aggregate the large sum of \$4,200,000. This is but a tithe of what might be produced. In view of these facts, how momentous it is upon the farmers of this fair Dominion to direct their thoughts and energies to a subject of such great and ever increasing importance.

EFFECT OF COLD ON COWS.

Dr Nicholas, of the *Boston Journal of Chemistry*, found that the cooling of cows' legs by standing in a pool of cool water in hot days in the summer, to avoid the annoyance of flies, diminishes their flow of milk. His observations were carefully and repeatedly made, and there could be no mistaking the fact that the chilling of their feet and legs decreased their milk secretions, so sensitive are cows to the influence of cold.

Such being the case, what must be the effect upon cows, which, at this time of the year, have not only their feet and legs, but their whole bodies, not only moderately, but severely chilled, by standing out in the cold winds and storms needlessly, all day, or have their legs, teats, and ears and tails nearly frozen, by standing still too long in a cold stable? These observations are worth remembering by every dairyman in these high latitudes, as a warning against exposures to the inclemencies of the seasons. How many dairymen have got a clear appreciation of just how much chilling a cow will bear before her milk will begin to shrink, or her flesh begin to give way? Not many, it is pretty certain, or we should not so often see cows on the leeward side of fences with their backs humped up and their heads and tails drawn down, and their feet all gathered upon a single square foot of surface, with the vain endeavour to ward off some of the intensity of the chilling blasts that distress them. If the owners of cows or other stock fully appreciated the extent of loss they endure by allowing their animals to get chilled to discomfort nearly every day all winter, they certainly would take better care of them. No man in his right mind would stand by idly and see the flesh of his own animals gradually but steadily wasting, without making a strenuous effort to check the waste. He certainly would exert himself, if he positively knew that either flesh or milk were being lost, and would cost four or five times as much to restore it again as for lumber to save it by making comfortable quarters.

Everybody is not expected to make as close observations as Dr. Nicholas, but it would seem as if anybody ought to be able to distinguish between the amount of flesh on a cow's bones in autumn and the quantity on them in the spring following a hard winter; and if he fed the animals decently well, he ought to be able to understand that the difference in flesh between autumn and winter is due to destruction by cold. The reader may think a man must be stupid if he could not "see it," but there are thousands of men in every State and Province, the flesh of whose cows comes and goes alternately every summer and winter, and yet the owners don't "see it." The man who could wake up the stock owners of a state, or even of a township, to a realizing sense of the losses they annually incur from needlessly exposing their stock to cold, or to cold which could be easily avoided, should be entitled to a pension the rest of his life.

The *American Garden* says that the scraping of fruit trees is often carried to excess. A healthy, vigorous tree does not require to be scraped at all; it needs all its natural bark for protection against the cold, drying winds of

CREAM.

CAN a man's pocket be empty when he's got something in it? Yes, when he has a big hole in it.

WE are asked when a young lady is of age, and we unhesitatingly reply not until she is married.

A GENTLEMAN who did not trust to his memory, wrote in his memorandum book, "Must be married when I get to town."

A LITTLE fellow of five, with his first boots on, being told that the baby wanted to kiss him, replied: "Yes, he takes me for his papa!"

A TEUTONIC friend ran a foot race and lost it; but ran again and won. He said: "I'm first at last, if I was behind before."

"Who is that across the street?" "Oh! that is a very close friend of mine." "Indeed?" "Yes. Never lends a cent."

JOSH BILLINGS says that the best medicine for rheumatism is to just keep still and thank God that it isn't the gout.

"SALLY," said a fellow to a girl who had red hair, "keep away from me, or you will set me afire." "No danger of that," was the answer, "you are too green to burn."

"JANE," said he, "I think if you lifted your feet away from the fire, we might have some heat in the room." And they hadn't been married two years either.

A LADY meeting a girl who had recently left her service, inquired, "Well, Mary, where do you live now?" "Please, ma'am," rejoined the girl, "I don't live nowhere now, I'm married."

"I HAVE neither time nor inclination to pass panegyrics on the deceased," remarked an orator. "Panegyrics," corrected a person present. "As you please, sir," remarked the orator stiffly, "the words are anonymous."

"Ain't you almost boiled?" inquired a little girl of a gentleman visiting her father and mother. "No, little one, I can't say that I am. Why do you ask, Daisy?" "Oh, because I heard mamma say that your wife always kept you in hot water."

A BANOR young man blackened his moustache with a lead comb, and then took his girl out for a moonlight stroll. When the fair one appeared in the bright light of the family circle a couple of hours later, her face looked like a railroad map.

How can nine pigs be put in four pens, and an odd number in each pen? Make one big pen, and in it three small ones. In each of these little pens put three pigs, which will be odd numbers each. Of course the big pen will have an odd number—the whole nine.

"Do let me have your photograph," said a dashing belle to a gentleman who had been annoying her with his attentions. The gentleman was delighted, and in a short time the lady received the picture. She gave it to her servant with the question, "would you know the original if he should call?" The servant replied in the affirmative. "Well, when he comes, tell him I am engaged."

In a certain family a pair of twins made their appearance, and were shown to their little sister of four years. It happened that whenever the household cat had kittens the prettiest were saved and the rest drowned. When the twins were shown the child by their happy father, she looked at them earnestly, and at length, putting her little finger-tip on the cheek of one of them, looked up and said, with all the seriousness possible: "Dad, I think I'll eat this."

SHEEP AND SWINE.

RAISING MUTTON.

Many of our farmers have gone out of sheep raising, and not nearly the number of sheep are now kept as there was a few years ago. The reason given for thus reducing the flocks is that wool is so cheap that it does not pay to keep sheep. But, granting that wool is low priced, sheep husbandry is more profitable now than when wool brought from thirty to thirty-five cents a pound, from the fact that mutton is so much dearer, and the demand for fat sheep greater. In relation to the weight of the carcass, the wool is only about one-eighth; so the great object in keeping sheep should be rather for the price of the meat than the wool. Mutton is fully two or three cents a pound higher now than when farmers sold their wool at a high figure—result, a better net profit than the difference in the price of wool then and now would make. So that those who own sheep at the present time have property worth more than ever before. Then, again, what a price will be given for early lambs; and how eagerly they are sought after both by shippers and butchers. With attention to breeding, and proper winter quarters for the ewes, early lambs may be easily raised and got ready for market when lamb commands the highest price. With such inducements for profitable sheep raising, it seems strange that farmers should persist in discouraging this branch of stock raising because wool happens to be cheap. A butcher, doing a large wholesale business, assured us recently that he never found sheep and lambs so scarce as now, and a large area of country has to be travelled over before a suitable lot can be gathered together for shipment.

A flock of sheep should double themselves each year, and the early lambs will sell for quite as much as the sheep cost in the first place, thus leaving the parent stock and wool to the good. In fact, sheep breeding is one of the best paying branches of mixed farming, especially in this country, with its dry climate and rich pastures. There is no country in the world where sheep thrive so well, are so free from disease, and attain such perfection, as in Canada. Those farmers who are neglecting this important industry are standing in their own light, and those who have kept up their flocks by careful breeding, have never done so well as during the past few years.

SPRING CARE OF BREEDING SOWS.

On many farms the breeding sows are perhaps the most profitable stock. But the profit is largely dependent upon the safe rearing of good-sized litters. We know so well how much depends upon practical experience in the safe rearing of large litters, that we shall not attempt to give minute instructions for the novice in such case. It is recommended, for safety, if the weather be cold, to take the pigs from the sow as fast as they are dropped, in a warm basket, to a warm room, and keep them warm till the sow is ready to suckle them.

In this case, it is supposed that the sow is quite dead, and will not be alarmed at the presence of an attendant. When the sow is done farrowing, a warm bran slop, with a gill of boiled flaxseed stirred in, should be given her.

When she has taken this, the pigs may be brought to her to suckle, and they will usually commence their work with activity.

The sow must be fed sparingly for a few days, so as not to produce or keep up a feverish condition of the system. But when this danger is passed, she must be fed with special reference to

Suppose she has eight pigs to feed, few have considered what a draught this is upon her system. After they are ten to twelve days old, they will drink three pounds of milk each per day. This will require the sow to produce twenty-four pounds per day—as much as an ordinary cow. To do this, she must be fed on the most nutritious food. Two hundred pounds of oats and one hundred pounds of corn, ground together, with one pint of linseed oil-meal added to each day's food, the whole cooked, and given in a thin slop, will be as good a diet as can be found. This will produce milk that will fill out the jackets of the little pigs, and make them grow to your satisfaction.

After the pigs are three weeks old, they should be taught to take cow's milk by themselves, as part of their food. The sow can not furnish all the food they want after that period. But the pigs should get all the food they want, so that there may be no check in their growth. If you have no cow's milk for them (and it may be skimmed milk), then give them ground oats and shorts, cooked with one-fifteenth part flaxseed. Feed this blood-warm in a thin slop. They will soon eat it greedily. It will also be easy to wean the pigs from the dam on this food. This small proportion of flaxseed will assist in keeping the pigs healthy. It is well to wean the pigs at about six weeks old, but not before that, and do it gradually, so as not to injure the sow. After weaning the pigs, the sow should be fed liberally, so as to soon recover from the heavy draught that the pigs have made upon her. When grass comes she should have a good pasture, as this will be a healthy situation for her to recover and get ready for another litter. A successful breeder should be kept for that purpose till four or five years old.

Now the feeder must remember that pigs should never stop growing until ready for sale. The aim should be to have the pig increase in weight at least one pound per day until ten months old, and then he is ready for sale, as more profit can then be counted on than ever after. It is generally true that every pound put on after that costs more than it will bring. Quick returns are the rule in pig-feeding.

CARE OF SHEEP.

A farmer, to be successful, should never sell a poor sheep, but sell fat ones and fatten the poor ones. Some farmers do not stable sheep, claiming that they can make them thrive out-of-doors. Now it is absurd to tell people that sheep will do better out-of-doors, and that it does not pay to shelter them. A man that can make a sheep fat out in the wet and cold would make a good success of feeding in shelter, if he would put his attention to his work like he would have to out-of-doors. A man should never keep more sheep than he can shelter without crowding, although some breeds will stand crowding more than others will.

The first thing in feeding is to be regular. Feed at a certain hour, and then stick to that time; for where feeding is done with regularity you can go about the stable and sheep will not pay any attention to you until the feeding hour.

Second is cleanliness. Keep the troughs clean, and do not let them stand in the wet manure, but use plenty of straw.

Third, I would say that good hay or corn-fodder should be used. If you have poor hay, feed it to the cattle, but never to the sheep. Corn shelled and mixed with oats and bran makes a good feed, but when the farmer has the money it is good to buy oil-meal; but we do not always have the money. The best rations are shelled corn, and

make certain that they get salt, mix a small amount with the grain, for some feeders are apt to be forgetful when it comes to giving on a cold morning.

The last, and most important, is water. A great many farmers claim that sheep do not need any water. I often wonder how they would like to be fed on bread and potatoes for six months without water. Water is necessary to animal existence, and why deprive them of it? To feed successfully, sheep should have water accessible at all times. In these days of bored wells it will pay a farmer to have a well by the sheep stable.

Do not scare your sheep, but make them know that you are their friend, and they will thrive; and it will be a pleasure to stand in the stable and watch them crack corn and eat hay without being on the watch to see if any danger is near. Shoot all stray dogs and some that are not stray. I believe the best motto would be, shoot all dogs not with their owners, and it would be better for the farmer and shepherd.—*National Stockman.*

LAMBS IN APRIL.

An exchange seasonably remarks that it is not only necessary to have the lambs early, but also to keep them growing. In addition to that which they derive from their dams, a feed of oats, either whole or ground, will cause them to keep in health and grow rapidly. In fact there is no grain so well adapted to feeding to sheep as oats, and they are very fond of such. One of the difficulties in allowing sheep and lambs on the same pasture is that the lambs are liable to all the ills that affect the older animals, such as cough, distemper, and if the pasture is wet perhaps the foot-rot may cause trouble. The lambs should not be permitted to remain with the flock, as they can be more easily and properly cared for when separated, and as it is the early lamb that brings the highest price, every effort should be made to secure it.—*Farmer and Fruit Grower.*

FEED THE LITTLE PIGS.

When a lot of pigs are running together, the larger and stronger ones get what they want to eat, but at the expense of the little ones, which have to be thankful if they get off with a whole skin, let alone having anything to eat. If a board is nailed so that the smaller ones can get through the fence into an adjoining yard or pen, they can there be fed more liberally and have a chance to get their rations in peace. On account of water and shed-room it sometimes is not convenient to divide the lot and keep the smaller ones by themselves, but by the arrangement of providing food for them in a small adjoining pen they can have as good a chance as the rest.

SHEEP should have their feet trimmed at least twice a year. If they are not trimmed the hoof turns under at the edges and retains a mass of filth and dirt which is apt to cause foot-rot.

KEEP a few sheep on the farm, if not many. Wool will always bring cash at some price, and it comes off when there is little else to sell. Mutton always sells well, and is always good for the table. Keep sheep.

SPRING pigs, as a rule, are worth more than any others. It is of much importance therefore that as many of them as possible should be saved. If lost, the main profits of the year are gone. Considering them as a source of wealth to the breeder and the nation at large, great care should be taken in providing for their safe delivery and in so arranging that they may thrive and do well from the first. No one having sows in farrow at this time should allow them to be neglected.

GARDEN AND ORCHARD.

FOR THE RURAL CANADIAN.

WALKS IN THE GARDEN.—IV.

APRIL is a busy month in the garden. The snow is gone, and the prudent man, who has ridged up his ground in the fall, will find it light and friable, owing to the pulverizing effects of the frost, and will often see his seeds sprouting from the ground, before his neighbour, who has not been so forehanded, can put a spade into the saggy soil. The manure which was put on in the fall will be more intimately blended with the earth, and in a better condition to be assimilated by the roots of the plants. No digging will be required, merely throwing down the ridges with a fork; and a rake will not be necessary, except to level the surface.

In most seasons many seeds can be put in during the first week in April, though this year, owing to the depth that the frost has penetrated, it may be a little later. The first seeds to be planted are onions, spinach, peas, beets, carrots, parsnips, salsify, and parsley. There need be no fear of getting any of these in too early. They will all stand any frost they may have to encounter, and the earlier they are planted the sooner the first crop may be expected, as a rule.

For onions, the ground cannot well be too rich, as long as the manure is well rotted, and it should be near the surface, as the roots of onions penetrate but a very short distance. Those who are fond of young onions, and who is not, should put in a pint of shallots or potato onions. They are necessary ingredients in salads. A quart or more of set onions should be planted at the same time. Both should be put in rows a foot apart, and four inches apart in the rows. The black-seeds should have the same distance between the rows, which, indeed, is about right for all root crops, to allow easy cultivation, and should be sown thickly, as the seed is not always sure, and the young ones can easily be weeded, and where they can be disposed of will realize more money than the main crop. Onion seed should be very lightly covered with soil.

The worst enemy that onion growers have to contend with is the maggot, which attacks the bulb when about the size of a pea, and eats away the substance. They can be detected by the wilted appearance of the tops, and there is, so far as I am aware, no remedy; at least, I have never been able to save the crop with any treatment I could discover. For this reason many persons are discarding the black seed altogether, and growing from sets exclusively. This is a much easier plan, but the bulbs do not keep so well, being apt to rot as the winter advances. Care in harvesting and storing, however, will obviate this to some extent. Onions, whether seed or set, should be thoroughly cultivated, and not a weed allowed to escape. They need all the nutriment there is in the soil, and none of it should be wasted on weeds. A top dressing of ashes or soot, or both, will be found very beneficial.

SPINACH, carrots, beets, parsnips, and salsify all want rich, deep soil, and should be covered about an inch deep. They should be cultivated as soon as they can be seen distinctly, and except the first, thinned out to six inches apart. Two thinnings are better than one—the first when two or three inches high, and the second when large enough to be of some use in the kitchen. The lighter the soil, the better the roots, provided it is rich, indeed it is useless to try to grow well-formed parsnips and salsify on very heavy clay—the latter will fork so as to be more trouble

to clean for the table than it is worth. Spinach may be sown as a catch crop, where cabbages, tomatoes, etc., are to be planted, as it will be over about the time they are ready.

If the soil is not sticky—and if it is seeds should not be planted at all—it should always be made firm around the seed when it is planted. Many pat the ground with the back of a spade or run a roller over it after sowing, but there is nothing better than the sole of the foot, and it is very ready. If this is not done the dry air penetrates to the tiny rootlets when they begin to sprout, and destroys their vitality. For the same reason, when plants are set out the soil should be pushed round them closely with the foot. A large proportion of failures, both with plants and seeds, is due to neglect of this simple precaution, especially on light soils.

The main crop of potatoes can wait till May, but it is as well to plant a row or two towards the middle or end of April. If they escape the frost they will be ready for use early in July, when they will be most appreciated. I always grow a few of the old Ashleaf Kidney, and can use them the last week in June. They have no market value, being small and not very productive, but they have a flavour peculiarly their own, and are fit to use when as large as pigeon's eggs. Whenever potatoes are planted, they will repay a careful preparation of the soil more than most people imagine. Merely opening out a ditch with a hoe and throwing the earth back again over the tubers is not enough. The trench should be about a foot wide, and the earth made as fine as possible. The cultivators of a Planet Jr. Wheel Hoe do it to perfection. If one takes the trouble to put about two inches of soil on the tubers, and then an inch of manure, and soil on that again, he will have no reason to regret it. I think that cutting the sets to two good eyes gives the best result.

LETTUCE may be transplanted to the open ground from the hotbed as soon as the ground is ready, there is very little danger of freezing it. It is hardly worth while to have a separate place for lettuce. The plants can be set here and there among raspberry or currant bushes, or wherever there is a vacant spot. Those who have never grown Cos lettuce should do so. In flavour and crispness it is much preferable to any of the cabbage kinds.

If the raspberries and blackberries have been buried—and those which were not this winter will, I am afraid, yield very little fruit—if they are alive at all they should be dug out and straightened up as early as possible. Broken pieces should be cut off, and if stakes are used the canes should be tied up at once. One handling is less trouble than two. The wheel hoe should be run through them, and the early weed growth killed, just as soon as it starts, but care should be taken not to go more than two inches deep, to avoid cutting the roots. Not more than six or eight sprouts should be allowed to grow, the rest must be hoed down as weeds.

THERE are a good many flower seeds that can be sown in April. Poppies, zinnias, marigolds, phloxes, asters, and nearly all the perennials can go in as soon as the ground becomes a little warm. Most annuals that are sown early will bloom as soon as transplanted from a hotbed, but more seed is required. If you have not time or inclination for much dower gardening, at any rate try a package of mixed seeds or "wild garden," such as are now sold by almost all seedsmen. The results will surprise you, and

probably induce you to go more into the ornamental line another season.

To those who have hotbeds, pricking out is a very necessary operation. There is nothing growing under glass that is not improved by one or two shifts before being planted in the open ground. Tomatoes, peppers, egg plants, and such semi-tropical plants had better be shifted from one part of the bed to the other, as too sudden a change of temperature to a cold frame checks and stunts them. The bed used for lettuce and radishes is a good place to put them. Other things, such as most flower plants, cabbage, cauliflowers, etc., can be transplanted into a cold frame, the glass being kept on during cool days.

THE temperature of the hotbed should be watched. A thermometer should be hung on the inside, and the mercury never allowed to go above ninety degrees. A few minutes' neglect may cook all the vegetation. At the same time care should be taken not to go too low, as a cold wave is just as bad as a hot one. A little experience will accustom one to regulate the temperature by opening or closing the sashes. The surface of the soil should never be dry, but at the same time too much moisture should be avoided, as the damping off of the tender vegetation is a general trouble. This, too, must be learned by experience.

How few people, comparatively, know anything about asparagus. They may occasionally buy a few stalks at the market, but they are tough and tasteless, and very dear. No one ever enjoys asparagus except from his own garden or that of a friend. Tradition has a great deal to do with the scarceness of asparagus beds. The old way of making them, handed down from generation to generation, involved trenching to a depth of a couple of feet or more, and the loading of the soil with manure, with other instructions enough to frighten an ordinary mortal. In reality an asparagus bed is a very simple matter. Spade the soil to a fair depth, and have it rich and friable. Make drills four feet apart, sow the seeds two inches apart and an inch deep. Keep the weeds down, and in the fall put on a thick coat of well-rotted manure—that from the hotbed is just the thing. Next spring, thin the plants out to eighteen inches, keep clean during the summer, and in the fall give some more manure. Next summer you can begin cutting the "grass." You are just about as far ahead as if you had bought the plants. It is an open question whether salt is necessary. It does not do any harm, however, and enough can be put on to check the weeds without hurting the asparagus. There is not much difference in the kinds. Conover's Colossal and Argentaui are in every catalogue, and are both safe. Y.

CLIVER is an excellent green manure for renovating the soil, but it is not adapted to every use. A young orchard will be almost ruined by seeding to clover, and a bearing orchard will often be seriously injured. For young apple orchards old enough to produce fruit, but which persist in growing more wood instead, seeding down is sometimes beneficial. It checks too rapid growth and thus induces fruitfulness. One reason why clover as green manure is so injurious to orchards is that it is not generally ploughed under until the trees are in full leaf. This is a great check to their growth, and the subsequent rotting of the clover sod stimulates an excessive growth late in the season, which does not ripen its wood and is liable to be winter killed. This alternate check and stimulation is especially injurious to trees and is apt to cause blight.

THE DAIRY.

HOW TO MAKE CHOICE BUTTER AT HOME.

Whilst various breeds and the individuals of that breed differ in butter-making propensities, both as to quality and quantity, it is to be regretted these propensities are not put to the best use; and much is lost in improper handling of the milk before it becomes butter.

The quality of the butter is affected by the food. Grass and clover should be succulent and tender; that grown upon high land is preferable to low, especially when the latter is swampy. It should be cut when young, before becoming woody. Corn fodder, bran, linseed, and rape-cake are valuable for cattle, and enrich the butter.

Cattle should, if in pasture, at all times have access to pure, fresh, running water. Failing this, a liberal supply of pure water should frequently be given. This is too often neglected. If the animal is stabled it should have exercise daily, but not exposed to intense cold in so doing. Cleaning manger and stall as well as currying and brushing the animal every morning systematically gives a clean skin, adds to the health of the animal and hence the quality of the produce.

Your dairy utensils should be clean, scalded directly after use, and sweetened, if possible, by sun and air, rinsing with cold water before use. Dairy utensils should be as free as possible from crevices and corners, which are difficult to clean.

Directly after milking, before temperature of milk falls materially, strain through an ordinary double strainer, having loose ring over top and bottom over which to stretch an ordinary cloth. This enables the whole to be taken apart and cleaned thoroughly. Strain into dishes or pails, not wooden, which you immerse in cold or ice water, allowing the milk to stand about an inch above the water surrounding it. You now have the best possible conditions for raising cream. The globules of fat being larger, etc., they are not acted upon as readily by the cold, heat expands and lessens their specific gravity, and they, in the cooling milk, become comparatively lighter and rise to the top more rapidly. Cold well or spring water will do, especially if changed once; but most farmers can, at a small outlay, store ice in straw for summer. If ice is not used the outer vessel and water should be covered in, say with saw-dust, to keep it cool. If no cool water can be obtained, the milk may be raised to a temperature not above 120 degrees by placing in hot water, that, if you have a cool cellar, you have the same condition as described above.

I have frequently tried this raising of cream, and find, under the first named conditions, it rises practically all in twelve hours, and there is a much larger percentage than by merely setting in pans independent of temperature. Much cream is lost by allowing the milk to partially cool before setting. If the cream lies apart and you can clearly see the milk when you draw your finger over it, it is time to skin, this will be twelve to twenty-four hours when above conditions are obtained. Place cream in a crock in a cool place and allow it to slightly acidulate—many say churn when sweet. Now here is where people make serious mistakes, and a man with one or two cows is at a disadvantage. Never mix the various skimmings, namely, to-day's skimming with to-morrow. If you allow the cream to get very sour, you will find in the butter nasty white grains difficult to get rid of. Twenty-four to thirty-six hours after skimming is generally long enough for the cream to stand, and at a temperature of from fifty-five to sixty degrees it will be ready for churning: if cooler it will take much

longer to churn. The object of churning is to break the globules of cream and obtain the fat separate from its surrounding coat. Now the simplest way of doing this is the best to keep the grain from being destroyed, therefore a simple dash or a churn with no interior device is the best. The experimental dairy at the Ontario Agricultural College uses the revolving box churn. When the globules are broken and have gathered sufficiently to be distinct from the milk, run off the larger portion of the milk and add cold water, which hardens the butter, then gather; or better still, have a large tin pail which revolves by a simple crank and is perforated; into this pour the contents of the churn, the globules of butter will be left. By pouring over a liberal supply of water and revolving the pail by means of the crank all the milk and water can be thrown off by centrifugal force, better and without danger of destroying the grain. You have now a first-class quality of butter, and the management now must depend upon the object; some prefer butter without salt; if for such and immediate use work into rolls, etc. Otherwise one-half ounce to one and one-half ounce per pound, according to taste and length of time to keep. Only the finest salt should be used and this previously crushed. Care should be taken to separate all milk from the butter; but this kept in view the less the butter requires to be worked the better. Squeeze the butter, do not slap it.

If cattle are on pasture when it fails, help them with bran and green fodder; if the flow once decreases it is difficult to regain it. Fields and all feed should be kept from wild onion, mints, and other strong-tasting herbs, as they taint the milk and may produce an inferior butter.

In winter keep stables well lighted and ventilated, but warm, so the animal machine may give its energies to milk secretion, not beef producing. Be gentle and kind to your cattle.

R. F. HOLTERMAUN.

WOMEN IN THE DAIRY.

It is becoming a serious question all over the world what occupation to put the young women at who, for any cause, fail to enter the marriage state. To our notion, there is no calling so admirably adapted to the feminine genius as that of dairying—perhaps not in its broadest sense, as including farming and stock-raising, but certainly in the way of making cheese and butter. If we had a bright young girl left to our care with the understanding that we were to find an occupation for her, and she had no personal objection to the occupation, we would certainly advise her to make a first-class cheese or butter-maker of herself—not that she need do the work with her own hands, for a knowledge of how to teach others is far more valuable than the single work of any individual can be. Woman has naturally the fine instincts of taste and smell that are inseparable from the finished dairyman or woman. She of all others knows what it is to be clean and neat about the appointments of the dairy-room and the utensils used in handling the milk or making the cheese or butter. She of all others will know whether the butter is made into enticing forms or enclosed in seductive packages. To be sure, she would not be a safe person to try to barter with by condemning her goods in order to cheapen them. Men are accustomed to such things, but without further experience she would be likely to fall back on her dignity early in the argument. There are so many points to raise in favour of women becoming expert makers of butter and cheese, and so few to oppose it, that we can hardly comprehend the cause that seems to ostracize them from this field of labour. Take butter-making as a typical case, and there

is no hard work attached to the business that cannot be performed by horse or steam power, or the rough hands of the farm labourers. The nice work depends upon the keeping and manipulation of the cream and butter before it is packed. This, the most vital part, is peculiarly women's work, and we think the world at large is losing one of its best powers in the most appropriate field, while women are for some cause denied entrance to this work, so admirably adapted to their nature and their wants.

HOW TO MAKE GOOD MILKERS.

An American dairy writer says: No matter what breed you have something further is necessary in order to reach the best success in raising good milkers. Good blood, whether Short-horn, Jersey, Devon, Ayrshire, grade or native, is not everything, but lies at the foundation; something cannot come from nothing. Treatment in raising a milker should be somewhat different from that in raising a beef animal or an animal for labour. Begin as soon as the calf is a day old; see that it has sufficient to eat, and is kindly treated and regularly attended to. Never pamper or over-feed, but give it good, generous food, to cause a regular and early growth. Accustom it to be handled, but not to such an extent as to acquire objectionable habits as a cow, but rather to be fond of the presence of the keeper. Kindness helps to create a quiet disposition, so important in a dairy cow, and this education must begin when the calf is young—any habits acquired when the calf is young are apt to cling to the cow when grown. For a milker I would have the heifer come in at two years old. She is then old enough to become a cow. I would not, as a rule, allow her to go farrow, but milk her up to within a few weeks of calving, even if I did not obtain much at a milking. A cow thus trained will give more milk, and be more likely to hold out long in milk, if her after care is judicious and liberal, as it should be. Such treatment tends to form the habit of giving milk, and, as we know, habit is a sort of second nature. Couple the heifer with an older bull—one, two or three years older than she is, is preferable to a yearling, and better stock is likely to come from such. After the heifer has come in, her feed should be regular and liberal. Good clover hay is the best of all, but we may not all have this for stall feed, then we must make up for what is lacking in some concentrated food, such as oatmeal, shorts, oil meal or the like, but great care and good judgment must be used not to overfeed or crowd as the future cow may be ruined. Undue forcing shortens the life of the cow very rapidly.

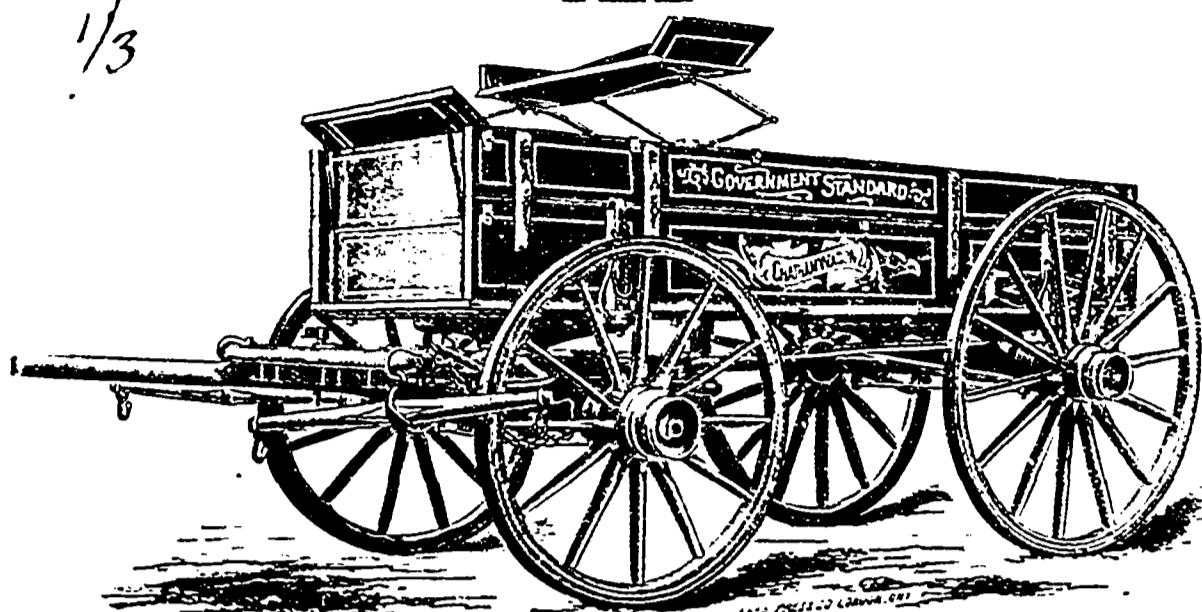
The importance of having cows to calve in the fall so as to have the heaviest flow of milk in winter, when milk and butter are high, cannot be too well understood. Some farmers value fall calves as highly as spring calves, for the reason that they are ready to turn on grass as soon as it comes in the spring, and so get the full benefit of a summer's pasture.

One of the strongest points in a really good cow, says an exchange, is that she will continue to give a good mess of milk during a long time. Many otherwise good cows fail in this respect. They give a large quantity in the first flow but soon drop off and are dry half the year. The habit of the heifer with her first calf fixes her habit as a cow in this regard. It is therefore not advisable to allow a young heifer to drop a second calf within a year of the first. It is better to wait so as to have the calves fifteen months or more apart; in which case the heifer can be kept in milk a longer time.

COGENT REASONS WHY

THE

CHATHAM



WAGGON.

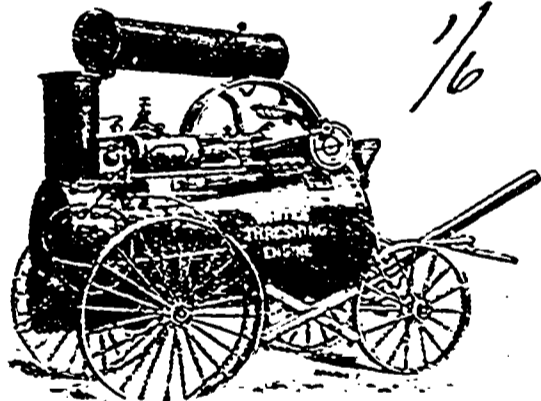
Adopted by the Government of the Dominion of Canada as the STANDARD WAGGON, should command your preference :-

The intrinsic cost and value of it is at least \$10 more than any other waggon made in Canada, and any unprejudiced practical man will tell you so, and the thousands who now have them in use say so, because it is not only made from the best, carefully selected and thoroughly seasoned timber and best of iron, but the skelings used, made only by us, are superior to any skelin made or used in Canada, and are constructed specially to receive our Climax Truss Rod, which doubles the strength of the axle; the boxing of the hubs are pressed, not wedged in; a guarantee for a year accompanies each waggon, and notwithstanding this additional cost and superiority, the Chatham Waggon can be purchased at no greater price than is charged for inferior waggons. Bear in mind it is the running gear that carries your load, and no amount of fancy painting on the box will make an easy running and great carrier of a poorly constructed waggon.

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It is licensed by all Insurance Co.'s and has proved itself to be the most durable.

The engine for the Northwest is made to burn either coal, wood or straw.

Farmers, procure a Genuine White Threshing Engine at the Forest City Machine Works, London, Ont., Can.

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A. W. WHITE, Supt of Erecting Dept

HUR. J. WHITE, Secretary Treasurer

F. J. WHITE, Assistant-Secretary.

The engines may be seen at Van Tassie, a first bridge warehouse, Belleville. As a proof of the popularity of my Threshing Engines, I may state that three or four other firms have commenced to imitate them, but sensible farmers will see that they get a genuine WHITE ENGINE. I am now making a larger number than ever before for the coming season.

The Successful Fire Proof Champion.

$\frac{3}{12}$ OVER 150 SOLD THIS YEAR.

Still turning out SIX EVERY WEEK, and the demand greater than we can supply.

Seven years' test has proved the **CHAMPION**

to be the best Engine in every respect for threshing.

The Threshers Favourite, The Farmer's Favourite.



THE ONLY ENGINE WATERLOO ENGINE WORKS CO., BRANTFORD, CANADA.

Which stands the Test of time, and still continues more popular than ever. Threshing better - rollers 6, 6 and 7 inch. Gandy and four-ply rubber kept on stock.

25 YEARS IN THE POULTRY YARD.
 I have a large stock of all the best breeds of Poultry, and I guarantee to give you the best of them. I have also a large stock of all the best breeds of Poultry, and I guarantee to give you the best of them. I have also a large stock of all the best breeds of Poultry, and I guarantee to give you the best of them.
 A. M. LANG,
 Coro Dale, Lewis Co. Ky.



Alma Ladies' College, ST. THOMAS, - - ONT.,

has the finest BUILDINGS and FURNISHINGS for the purpose in Canada, a FACULTY of SIXTEEN Professors and Teachers, 17 gentlemen and 10 ladies; an enrollment of 125 students last term, 80 of whom were residents in the College; Courses of study in LITERATURE, LANGUAGES, FINE ARTS, MUSIC AND COMMERCIAL TRAINING.

RE-OPENS after EASTER HOLIDAYS on TUESDAY, APRIL 7th, when (owing to the intended departure of a few pupils) 6 more resident students can be received. For Announcement, address PRINCIPAL AUSTIN, M.D.

DITCHING MACHINE.
 For underdraining, capable of doing more work than 30 men with spades. Satisfaction guaranteed. See our Circular. Manufactured only by **WILLIAM RENNIE, TORONTO, ONT**

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EVERY FARMER IN CANADA SHOULD HAVE A GOOD PERMANENT PASTURE, WHICH CAN ONLY BE OBTAINED BY SOWING A SUITABLE MIXTURE OF GRASSES IN PROPER PROPORTIONS. **RENNIE'S MIXTURES FOR PERMANENT PASTURE** have been prepared from prescriptions based on a long experience of 17 years, and have given the most successful satisfaction to purchasers in former years. The Mixtures contain the best and most nutritious GRASSES and CLOVERS, and are specially prepared for **HIGH LANDS and LOW LANDS**. Illustrated Catalogue for sale containing prices and descriptions of the various Grasses and Clovers included in these Preparations, will be sent free to all upon application. Send for Price List of Seed Grain. **WM. RENNIE, Seed Grower, - TORONTO, ONT.**

Brown Leghorns
 - AND -
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EGGS for HATCHING,
 \$1.00 PER SITTING.
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\$65 A MONTH AND BOARD for five Young Men or Ladies in each County. Address P. W. ZIEGLER & Co., Philadelphia or Chicago.

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 MENSURY
 WM. RENNIE, - TORONTO, CAN.
 OBSTRUCTIONS of the Stomach, Liver and Bowels, are promptly removed by National Pills.

BUSINESS ANNOUNCEMENT.

TO CANADIAN FARMER SUBSCRIBERS.

There is a number of our subscribers who are behind in their subscriptions. We beg to intimate to those that such back amounts, whether for a whole year or years or for a part of a year, are due to the old publishers. We will shortly send to each one of our subscribers a statement of the amount due, when they will oblige greatly by remitting if convenient. All who have paid us for the present year or a part of the same will of course receive the paper up to the time of expiration of their subscription from the new publishers. Yours very truly,

W. H. MONTAGUE, Editor.

The Rural Canadian.

TORONTO, APRIL, 1885.

HOW WE HAVE SUCCEEDED.

An Ontario correspondent of the *British Agricultural Gazette*, who writes from Port Perry over the initials of S. L. C., has got into a dispute with Professor Tanner and another Englishman on how we have succeeded in Canada. Our visitors, this correspondent observes, seem to have imagined that because we have now the latest agricultural implements and labour-saving machines, we always had them. He goes on to say that when our pioneers went into the forest they had nothing but the axe and what they could contrive to make with it, and one or two rough carpenters' tools—say an auger and a saw. Our visitors, it may be, saw our present grindstones running with iron axles on friction rollers. The pioneers had only the grindstone itself, with its spindle and crank made of wood, the frame being two rails sloping up against a tree or the log cabin, with notches in the rails forming the journals in which the axle worked. Then, as to the pioneer's house; it was built of rough logs, the chinks being plastered with clay, the floors frequently being logs split in two and smoothed off with an adze or axe, and the roof being made of troughs hollowed out with the same implement and inverted one over the other. It was in this way that the men who have made Canada began life; and if they are in a state of comfort now, with well tilled lands, substantial buildings, well bred live stock and the latest inventions in labour-saving implements, they owe it almost altogether to their own unaided efforts. They were not men of the English farmer class who keep a horse and carriage, who never did any work, and whose hands were as soft and fine as a lady's. The men who settled Ontario for the most part were British farm labourers, who worked hard themselves, and who depended on themselves alone for success in bush life. The few of the better class who did come to the country were generally too proud to rough it; they were not the stuff out of which pioneers were made, and, as a rule, they failed. British farmers would not or could not have withstood the hardships which our pioneers went through, and there is no sensible man in the Province who does not honour our pioneers for their pluck. When we consider the wonderful achievements of the past fifty years, we are led to hope for achievements still more wonderful in the next fifty, and almost to wish that we might live to witness them.

MORE DISCUSSION WANTED.

An English agricultural journal recalls what some one once said, that if you travelled by rail through England in a first-class carriage, you would never be asked a question, and never have one of yours answered, whilst, if you travelled third-class you would of necessity have collected, before you had done, a summary of English history, plus the gossip of the society paper, plus

not much to complain of in this country on the score of exclusiveness, but we are convinced that a great good might be done for farmers themselves if discussion of farm topics were more general than it is. We need to ask a great many more questions, and do the best we can to answer them. There is not an agricultural society in the country whose usefulness might not be greatly improved by frequent meetings of its members and home-like discussions of subjects of common interest. If they could only be prevailed upon to give results with feeding stuffs, manures, drainage, etc., an immense deal of good might be accomplished, for each of those societies would then of itself be as good as an experiment station. And what is perhaps of yet greater importance would be the frequent communication of ideas and observations to the agricultural journals. We have thousands of well-informed farmers in Ontario, who could, if they would, make valuable contributions in this way, and it is only by such contributions that a really live and valuable farm journal can be maintained. It is our object to make THE RURAL CANADIAN just such a journal, and we trust its readers will make the best possible use of its columns for the spread of practical information. We should have experiments in every department of farming constantly being made all over the country, and if the results are given to the public through the medium of the agricultural journals, it cannot long continue to be said that the education of the Ontario farmer is in any important respect neglected, or that with us agriculture is travelling first-class after the fashion of travel in the English railway.

COTTAGES ON THE FARM.

The hiring of assistance forms one of the heaviest items to the farmers of this Dominion; and the present high rate of wages often deters many from making much needed improvements for developing the resources of their farms. In our opinion the method adopted at the present time of hiring help is not the correct one. Just engaging men for the busy season only compels the greater portion of our labouring men to seek other employment, and consequently over-stocks the labour market during the winter months. Then, again, there seems to be a prejudice against engaging married men unless they will live with their employer, an opinion prevailing that it costs but little more to feed the hired men. The meals having to be prepared for the family, the extra cooking gives little additional trouble. There is added work and money, however; and the female members of the farmer's household have sufficiently increased duties to perform during the summer months, without having this extra burden imposed on them.

All this could, in a great measure, be avoided by building cottages on the farm, and engaging what might be called permanent help; or, in other words, hiring the men by the year. The labouring man would then have a home close to his work, where he could have a small garden, keep a cow, poultry, etc., and bring up his family in comfort. He would, therefore, be far more likely to study the interests of his employer than would a man only engaged for a few months, knowing that directly the term for which he is hired expires he will be turned adrift to find employment where best he can. It is also only likely such men will demand higher wages to enable them to live during the time they are unemployed.

The building of cottages on the farms would, in a very few years, tend to bring down the high rate of wages, by increasing the rural population. The families of the labourers would be found very

stead of, as at present, filling our cities, towns and villages with idlers.

It is not necessary that the cottage should be near the homestead. It can be placed within a convenient distance, without spoiling the appearance of the farm.

GROWING BARLEY.

In spite of the sweep of the Scott Act in the Province we think that barley is one of the most profitable crops that our farmers can grow, especially since the over-production of wheat in the world and the consequent fall in the price of that staple. The market price of barley is of course variable, like that of every other grain; but the demand for it is constant and prices are not likely to fall below a non-paying figure. The consumption for malting purposes in our own country has never been large, compared with the total product of the crop, and even if every malting house in the country were closed the state of the market would not be very seriously affected. It is to the United States that we must continue to look as our regular market-place, and considering the superiority of Ontario grown barley over that of the product of any State of the Union we have no fear of being supplanted there. American brewers and maltsters must continue to have Ontario barley, and they will be always ready to pay a good round price for it as compared with any other. Then there are these facts to be considered: (1) that there is only the short period of fifteen weeks from sowing to reaping time; (2) that the average product per acre is greater than that of wheat; (3) that at the present time the market price is little below that of wheat; and (4) that even should the demand fall off the grain can be fed to stock on the farm so as to realize a handsome profit. For these reasons we do not hesitate to counsel the farmers of Ontario to sow barley. They can scarcely lose upon it, and they are almost certain to make upon it more than upon any other of our staple cereals. We would also counsel them to sow early, provided the land be dry and in a good state of tillage. The early-sown grows a longer straw as well as a longer ear, and having a better chance to tiller, a smaller quantity of seed is required than where late-sowing is followed.

CANADA SHORTHORN HERD-BOOK.

Below we give a list of transfers of thorough-breds reported up to March 30, 1885. In the following list the person first named is the seller and the second the buyer:

B. Raspberry Duke [12029], by Butterfly's Duke [11703], John S. Armstrong, Speedside; Ezra Hawley, Carnock.

B. Tornado [12834], by Baron Newcastle 4th [8606], Cyrus Smith, Morpeth; Thos. Huckleberry, Troy.

B. Royal Cecil [12636], by Scarlet Velvet [7893], Jos. S. Thomson, Whitby; J. W. Shier, Vroomantown.

B. Baron 10th [12697], by Baron 2nd [9668], Wm. Redmond, Millbrook; Peter Dawson, South Monaghan.

B. Victor [12699], by Calloden [8292], T. Day Everton; John Gardiner, Merlin.

B. John A. [11875], by 5th Lord Red Rose [10178], T. C. Stark, Gananoque; John Wilmot, Kingston.

B. Duke of Athol [12840], by 5th Lord Red Nose [10178], T. C. Stark, Gananoque; John Sigsworth, Harrowsmith.

B. Grand Duke 2nd [12041], by 6th Duke of Kent [11043], John Moyer, Kossuth; Jasper Crooks, Scotland.

[6242], C. & T. Boulton, Portage-la-Prairie; Philip McKay, Portage-la-Prairie.

B. British Flag [12642], by 5th Earl of Goodness [8514], Wm. Douglas, Onondago; John Buchanan, Branchton.

B. Baron of Goodness [12647], by 5th Earl of Goodness [8514], William Douglas, Onondago; Jas. McArthur, Ailsa Craig.

B. Somerset [12048], by Baron Woodhill 18th [9681], T. C. Pattison, Eastwood; Jno W. Evans, Everton.

C. Orford Lass [14474], by Wentworth, R. B. Ireland, Nelson; John Littlejohn, Highgate.

B. Oxford Duke [12628], by Mazurka Duke [5702], R. B. Ireland, Nelson; John Littlejohn, Highgate.

B. Duke of Waterloo [12652], by Mercury [10780], Thomas R. Smith, New Hamburg; Noah Cressman, New Hamburg.

B. Sandy [12659], by Duke of Oxford [8961], Peter Thiel, Tavistock; W. Smith, New Hamburg.

B. Listowel [12055], by Mercury [10780], T. R. Smith, New Hamburg; Jas. Patterson, Listowel.

B. Orpheus 18th [12662], by 4th Duke of Clarence [4988], C. W. F. S. Co., Brantford; John Y. Reid, Toronto.

B. Lorne [12671], by Bruce [10824], Lot Stanway, Paris; W. Turnbull, Brantford.

C. Daisy [14500], by Duke of Sharon [9901], James Brown, Galt; John Y. Reid, Toronto.

C. Floss [14497], by Duke of Sharon [9901], James Brown, Galt; John Y. Reid, Toronto.

B. Lord Elcho [11144], C. C. Charteris, Chatham; Charles Ryall, Olinda.

B. Ernest [12665], by Loo [8907], George A. Wilkinson, Thorold; Richard Moore, Welland.

C. Bella [14512], by Loo [8907], George A. Wilkinson, Thorold; Richard Moore, Welland.

B. Dauntless [12005], by Schomberg Duke [9829], John Lamont, Caledon; Donald McLenzie, Flesherton.

B. Prince Bismarck [12678], by Northern Sheriff [10258], Andrew Weir, Walkerton; John A. McDonald, Chesley.

B. Hill Duke [12686], by Spotted Duke [12126], Benj. Snider, Bloomingdale; Levi C. Snider, Bloomingdale.

B. Henry 1st [12679], by Red Comet [10876], John Hassard, Caledon East; Jas. Cunningham, Campbell's Cross.

B. Earl of Goodness [12601], by Crusade [6797], Henry Groff, Elmira; Binions Bros., Iroquois.

C. Lady Courtwright [14531], by Baron Languish [4534], B. S. Scarnon, Blenheim; Wm. P. Straith, Charing Cross.

C. Lady Hoskert [14582], by Baron Languish [4584], B. S. Scarnon, Blenheim; W. P. Smith, Charing Cross.

B. Lord Wolseley [12707], by Baron Languish [4584], B. S. Scarnon, Blenheim; Wm. P. Smith, Charing Cross.

B. John Languish [12608], by Joe Languish [9508], B. S. Scarnon, Blenheim; John P. McDougald, Blenheim.

C. Rosabelle [14507], by British Prince [8174], Henry Hilker, Port Elgin; Arch. Pollock, Aberdeen.

C. Winnifred 5th [14508], by 4th Sonsie Lad [11568], W. T. Benson, Cardinal; Wm. Barr, Renfrew.

B. Typhoon [12709], by Shelby [10470], C. Pettit, Southend; Peter Climenhaga, Stevensville.

C. Sweet Brier [14589], by Shelby [10470], C. Pettit, Southend; Geo. Murray, Stamford.

C. Lily [14495], by Lord Derby [7929], And. Aitchison, Inverhaugh; Peter Aitchison, Inverhaugh.

Andrew Aitchison, Inverhaugh; Sebastian Lehman, Formosa.

B. Sir Charles [12711], by Garfield [9987], A. Aitchison, Inverhaugh; Peter Aitchison, Inverhaugh.

C. Juno [14587], by Duke of Moorfield [8427], W. Rutherford, Millbank; E. Hammond, Moorefield.

B. Mohawk [12713], by Duke of Moorefield [6427], W. Rutherford, Millbank; Jas. Short, Linwood.

B. Acme 2nd [12715], by Red Rover [9225], John A. Brown, Rapid City; Mrs. Mary A. Brown, Rapid City.

B. Young Cecil [12717], by Lord Cecil [7925], W. Lang, St. Mary's; John Hooper, Metropolitan.

C. Bessy [14544], by 15th Seraph [10821], G. Burnett, Winterbourne; A. Merner, Waterloo.

C. Florence [13545], by 15th Seraph [10821], George Burnett, Winterbourne; John Burnett, Conestogo.

B. Duke of Perth [12718], by 15th Seraph [10821], George Burnett, Winterbourne; George Rock, Mitchell.

C. Louisa [14546], by Barnum [12719], Peter B. Kelley, Holstein; Charles W. Kelley, Guelph.

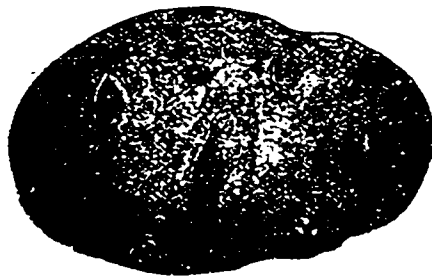
C. Lady Simpson [14549], by Rosedale Duke [6140], Robert Simpson, Port Hope; Jno. Anderson, Canton.

C. Adeline 5th [24548], by Baron Boulton [4570], Robert Simpson, Port Hope; John Anderson, Canton.

B. General Gordon [12720], by Derlington [9805], Wm. Walker, Ilderton; Richard Briggs, Duncrief.

NEW POTATOES.

New varieties of potatoes are produced from the seed contained in the small seed-balls occasionally found attached to the vines. From one



seed-ball as many as twelve or fifteen different varieties of potatoes will be produced, and all probably quite distinct from the parents. The first year after sowing, the tubers will be about the size of small marbles and increase in size until the third or fourth year they attain their full size. Very frequently the entire lot is worthless, and seldom more than one useful variety is produced from the seed of one ball. Potatoes raised in this manner are usually called "Seedlings." The ease with which new varieties can be raised, and the chance of perhaps obtaining a potato superior to anything in existence, has induced many farmers to grow seedlings. These seedlings have been offered as distinct varieties, and in many cases they are; but of the great number now cultivated—upwards of five hundred—how many are superior to the Early Rose? Occasionally a really valuable new sort will come to the front. The White Elephant as a late, and the Early Ohio as an early sort, were valuable introductions and merit the extensive cultivation they receive. Early sorts are, undoubtedly, the best for Canada; late varieties may do well in the southern portion of Ontario, but early potatoes are the surest crop.

Last season an early variety, the Halton Seedling, was sent out by Wm. Rennie, of Toronto; and from all reports has proved to be of more than ordinary merit. The Halton was produced from seed of the Early Rose by a lady residing in Halton County, Ontario. The plant was discovered growing in a flower pot, which had been filled

toes were growing. Care was taken of the plant and the product saved from year to year until the tubers attained their full size. The variety was carefully tested by growers in different parts of the country and found to be fully ten days earlier than the Early Rose. The tubers are of an oval shape, and medium size, and when boiled are dry and mealy. The vines are very strong growing (this characteristic is quite noticeable), giving the plant a healthy appearance. The Halton bids fair to become the leading early potato in Canada, and at best deserves a trial from our farmers.

FARMERS, PLANT TREES.

The tree planting time is not far off. Every farm should have an *arbour day*, whether the State Legislature has provided for one by legal enactment or not. On some farms little has yet been done in the way of planting for ornament, shade or windbreaks. On such, a commencement should by all means be made this spring; on others liberal plantings have been made. But there can always be found places where a few more trees can be set with profit and to the improvement of the surroundings.

Our excellent contemporary the *Farmer's Review* offers the following hints on the best trees to plant: "Among the reliable kinds adapted to northern localities are of deciduous trees the white, rock, and ash leaf maple (box elder), white and green ash, white elm, honey locust, catalpa (*speciosa*), and other varieties. Of the purely ornamental are the European mountain ash, canoe birch, cut leaf maple, European alder, weeping willow, and ash. The European larch is also worthy of a place as an ornamental tree, and in a timber plantation. Of hardy evergreens, we have the Scotch, Austrian, and (native) white pine, Norway and American spruce, American and European arbor vitae, native red cedar and balsam fir, while in dwarf evergreens we have the junipers, and two or three varieties of dwarf pines. All the above-named varieties and many more can always be found in the stock of any first-class nurseryman. A temptation always present to the tree-planter, especially if new at the business, is to select large-sized trees. This is a mistake. Medium or small-sized will cost less and give better satisfaction as the years go by; you get better roots with them, and they will in a few years outgrow the larger-sized on which only a portion of the root could be saved."

DR. BARNARDO, of London, England, intends bringing out to Canada, early in April, about one hundred boys from his home in England. These boys are all well trained and are just the sort of help required by the Canadian farmers. Those who desire to receive such help should make application at once to Dr. Barnardo's Home, Peterboro', Ont.

In response to numerous inquirers, we beg to say that it is impossible to supply copies of THE RURAL for January, February and March. The usually large edition for each month has long since been exhausted; and it is quite out of our power to supply a single copy. We deeply regret that so many friends have been disappointed. Next year they will doubtless renew early, and so secure the complete volume.

MESSRS. D. A. JONES & Co., of Breton, have sent us the initial number of the *Canadian Bee Journal*, a neat, well-printed periodical of 16 pp., Royal octavo, to be issued once a week at \$1 per annum. Mr. Jones, the well-known bee keeper, is qualified, from ability and experience, to produce an interesting and useful journal for his brother bee-keepers, and we have no doubt this new venture will have the hearty support his enterprise deserves. We wish the *Canadian Bee*

Bees and Honey.



OFFICERS OF ONTARIO BEE-KEEPERS' ASSOCIATION, 1884.—

President, Dr. Thom, Streetsville; 1st Vice-President, S. T. Potit, Belmont, 2nd Vice-President R. McKnight, Owen Sound; Secy.-Treas. Jacob Spence, Toronto.

EXECUTIVE COMMITTEE—D. A. Jones, Beeton; Wm. Campbell, Cayuga; S. Webster, Doucater; F. H. McPherson, Beeton; P. C. Dampsey, Trenton.

Communications on the business of the Association, and Bee-Keepers' Department of the *Canadian Farmer* to be addressed to the Secretary-Treasurer, 251 Parliament St., Toronto.

BEE-KEEPERS LOOKING FOR COMPENSATION.

In a paragraph on the first page of the last number of *THE RURAL*, it is stated that black bees cannot be kept with profit where Italians and Cyprians have been introduced, because the latter are larger and stronger and are therefore more than a match for the blacks; and the writer goes on to state that several instances have occurred where farmers, having fifteen or twenty colonies of blacks, have had their yards cleaned out by the yellow bees, and that those who have suffered in this way are entitled to compensation from the owners of the robbers. With the last proposition I entirely disagree. Robbing is induced in times of scarcity, either by exposing the honey in the yard, or by having queenless or very weak stocks. Even in these robbing can usually be prevented by reducing the entrance so that only a single bee can pass at a time. Where all precautions are neglected, sometimes the whole apiary gets the robbing mania, the strongest stocks attacking each other until dead bees lie thick in front of the hives and many of the best colonies are ruined. The owner of the robbing bees is in this way the greatest sufferer through the bad management of his neighbour; and this state of affairs has happened before ever there was a yellow bee in America.

Dr. Dziertzon says: "Robbing is a bad habit of bees for which those bee-keepers are to blame who give them the opportunity of robbing, by allowing faulty stocks to remain in the apiary, and by not being careful in feeding and in cutting honey-comb out of the hive." Langstroth says: "When the habit is once formed, it is a question whether the bee ever returns to honest courses."

If several farmers have lost fifteen or twenty stocks by robbing, it is clearly their own fault. Some men who call themselves farmers neglect their stock so that their calves die of want in winter, and their cows are so run down in spring that they cannot rise without assistance. It is the same sort of neglect which allows bees to be robbed, only in this case not only does the owner suffer, but his want of care demoralizes the bees of his neighbours, who may be depending on bee-keeping for a living. This is not the only way in which the regular honey-producer suffers from the thriftless owners of fifteen or twenty stocks. A case occurred in which some ten or twelve stocks belonging to a farmer became affected with foul brood. A producer who had a large apiary in the vicinity found that his bees were being contaminated. On tracing the disease to the farmer's bees he found that the owner had

usual, and had sold two or three of the diseased stocks. On being asked to cure what he had left or sell them at a nominal figure to one who would cure them, he positively refused to part with them at less than the full price of good sound colonies.

These are the bee keepers who also break down our honey markets. They are usually too penurious to spend even a dollar for a bee paper, and know nothing of the extent of the crop or of the demand for honey, and have no confidence in the business. The wholesale price for honey in Lindsay has been twelve and one-half cents; but last summer one of those farmers rushed in with his honey before it had time to cool and sold it at ten cents per pound for fear Corneil would stock the market. I went to a neighbouring town recently to sell honey. I learned that one of my neighbours, a farmer owing about twenty stocks, had been there a little while before and had sold direct to consumers at ten cents and to dealers at the same price. After selling about 300 pounds to consumers at twelve and one-half cents in quantities of from ten to fifty pounds, I struck a bargain with a dealer for 900 pounds at eleven cents. My neighbour had only ninety pounds to sell and two or three cents a pound on that quantity was not of much account to him, but I had still on hand a ton and a-half and even one cent a pound would make a difference of \$30 to me.

As to the yellow bees being larger, I never could see much difference; and I am not aware that any test of their comparative strength has ever been made. The yellow bees are certainly more pugnacious in the defence of their hives. A. T. Root says: "A dozen Italians will often defend a hive better than a whole swarm of black bees." The yellow bees are always "on the make," and will work for cents if they cannot get dollars; while the black bees are hanging clustered on the outside of their hives. Professor Cook, speaking of the Italians, says: "They are, in my judgment, less liable to rob other bees. They will find honey when the blacks gather none, and the time for robbing is when there is no gathering. This may explain the above peculiarity." Last fall I bought over fifty stocks of black bees from a farmer, who found he had not time to attend to his bees and at the same time run his farm for all it was worth. I shall place them in the spring in the yard, right amongst my yellow bees, and I have no fears whatever of their being robbed.

In taking the ground I do in the foregoing remarks, I do not desire to discourage farmers from keeping bees. All I ask is that they give their bees the same thoughtful attention which the thrifty farmer gives to the care of his Durham or Jersey stock, and to pay as much attention to the marketing of their honey crop as they do to the marketing of the other products of their farms. There are thousands of tons of honey every year in our country which may be had not merely for the asking but for the taking, and there are thousands of families who never taste a drop of honey from one end of the year to the other, except, perhaps, "just a little for a cold." If bee-keepers in a small way were to look after their bees and their products as they should do, the large producer would have no reason to complain, and the farmer who owns fifteen or twenty stocks would have no occasion to talk of looking for compensation.

Lindsay, March 16, 1886.

ASKING SUGGESTIVE QUESTIONS.

The question asked ought to be such as that the right answer should be interesting and useful

telligently presented inquiry on almost any matter of bee management will be likely such as many more in somewhat similar circumstances will also desire to have the information sought. In first reading the question it often happens that the reader is at once ready to say. "Now that's just what I wanted to know." Indeed, the right shrewd putting of the inquiry is interesting too, as manifesting the working of other minds on the same problem on which the reader also may have been bewildered, or may have been led to study so as to satisfactorily solve. And if the light obtained by investigation, experiment, etc., may be valuable to those still in the dimness of doubt, bee keepers of large experience assuredly can be generally counted on as remarkably disposed to obey the good injunction "Let your light so shine"—so that there is every encouragement to hope that proper, thoughtful questions will not remain unanswered.

QUESTIONS

by several have been asked in regard to whether or not salt in any form or at any time can be fairly regarded as of any real utility for bees. And if so, then how and when to be administered?

Some bee-keepers express the opinion that bees that have been wintered in bee-houses or cellars will not be as fit for outside next winter as those that have stood outside in the past, and that this also applies to the swarms from such hives? The theory is that they (by inherent tradition) know or estimate from the past winter conditions, and prepare accordingly. Is there anything in this like acclimatizing? If so, should not purchasers take into consideration the antecedents in view of how they purpose wintering?

The *why* and *wherefore* of which way hives should be faced, or whether there is any real advantage in *aspect*, east, west, north or south, or any other point? Some bee-keepers of large experience assert there is not in this a particle of reason for preference. Is there?

COMING QUESTIONS.

1. In what direction as to manipulation are we now to look for next great improvement? (Of course, in reply only opinion, guess or speculation is expected.)

2. In which department is advance most needed? Some think safe wintering the main want; some want greater facilities for taking surplus; others are aiming for a yet improved strain of bees; then pasturage to keep up succession of honey production throughout the early middle and late seasons; and various minor improvements are advocated. Of course, nothing is to be left out that can be fairly regarded as (even only in a small degree) bearing on the comfort, quiet and safety of the "blessed bees," or the accumulation of profitable results to the thoughtful owner. Assuredly we are not yet made perfect. It is a small hive, but has room for improvement; and some very large ones have more ample outlet for advancement.

FOUL BROOD CURE.

DISINFECTING HIVES—THE CAUSE, PREVENTION, AND CURE OF FOUL BROOD.

JACOB SPENCER, Esq., Sec. O.B.K.A., Toronto.

DEAR SIR,—In the January number of *THE RURAL CANADIAN*, Mr. R. W. McDonnell asks me to state whether I take any precaution to disinfect hives in which foul brood has been.

In answer to his question, I must say that I never do, as I do not believe that a dry, empty hive in which foul brood has been ever gave the disease to any hive of bees. But I do know from experience that foul brood is caused by the rotting of *spores* (or *brood*: that in all hives) the

disease is more in the honey than in anything else, and that, as soon as the hives become weak from this disease, robbers come from other hives and carry the disease just in proportion to the amount of diseased honey thus carried to their own hives.

As a preventive of foul brood, in the spring have plenty of both bees and honey in every hive and keep the bees well crowded with division boards, giving them no more combs than they can thoroughly cover until the warm weather comes to stay, as before this period, during the recurrence of cold intervals, the brood is liable to chill unless well covered.

When foul brood first makes its appearance in an apiary there are usually not more than one or two hives affected with it at first, and if promptly attended to it can be very easily and simply cured (in the honey season when the bees are gathering honey) by removing the queens from the foul brood hives to healthy nucleus prepared for the purpose. As soon as the brood hatches in the foul brood hives, remove the diseased combs and put in their place a set of empty combs. Then by carefully extracting all the honey placed in those for the first few days, all possibility of infection will be prevented, as the foul honey with which the bees had gorged themselves when the diseased combs were taken away, will by that time be entirely removed, and nothing will remain but new, untainted honey, which at this season is rapidly coming in. About sundown give them the queen and combs of brood from the nucleus and all will be right.

The diseased combs should be made into wax as soon as they are taken from the hives. As the frames will cost so little they should be burned as they would be sure to be daubed with the diseased honey.

The young bee destroyed by foul brood first turns yellow; as it decays further it becomes brown, rotten, ropy matter.

It is twenty-one years this spring since I began bee-keeping, and the most bitter experience I have had was in 1875, when foul brood originated in my apiary. It was then I chanced on this way of curing it in the honey season. Let it be remembered all these operations must be performed in the honey season. Wm. McEvoy.
Woodburn, March 14th, 1885.

I like THE RURAL CANADIAN the best of any of the agricultural papers, and I well pleased to know that the Bee Department is not going to be run in the interests of the supply dealers only.—Wm. McE.

A REPLY WITH SUGGESTIONS.

MR. EDITOR,—I am well pleased with THE RURAL CANADIAN, and particularly with the Bee-Keepers' Department. I am glad we have so good a bee paper in Ontario, and it is just as well incorporated with an agricultural journal. The best American bee journals do not adhere exclusively to apiculture.

E. Grainger asks in last number of RURAL, "What is the best plan for a person to control swarming who is working a long distance from home, and who can only work in the morning and evening?" Mr. Grainger will have to work exclusively for extracted honey, (which pays the best), and have large hives. I prefer A. T. Root's Langstroth Chaff Hives (I can make them with common tools, and any one can by using shingles for covers). The hive contains so many frames when used for the extractor, if we keep the honey extracted, that the bees will seldom swarm, and never if we divide artificially when they get too strong for one hive. Do not try to keep the queen below, let her go where she likes. Extract from both stores, and place

all the brood below you can every time you extract. Do not extract from combs containing mostly brood. Some of my hives are as wide below one way, as they are above, and will contain twenty-five frames for the extractor, and are practically non-swarmers. My bees are a cross between the Holy Lands and Italians, and I think the best bees in the world. From some of my best swarms I extracted over 100 pounds of white clover honey last summer, and we live right on the lake shore. But we do not keep over fifty or sixty swarms, for we have a farm to attend to beside.

ILA MICHENER.

Low Banks, March 16, 1885.

HONEY IN HISTORY.

There is no description forthcoming of the hive saved in Noah's Ark, nor of the style which Abraham used in "the land flowing with milk and honey," but there is account that when Jacob sent to Egypt for corn he forwarded to the ruler a present of Canaan's celebrated honey (Gen. xliii. 11). King David's army in Gilead had honey as an article of provision (2 Sam. xvi. 29). Solomon commended honey (Prov. iv. 13). Butter and honey are associated (Is. vii. 18); and in numerous passages of Scripture honey has very favourable mention.

The Grecians, Persians, and Romans used honey as a choice article of diet. Democritus recommended honey to all who wished to live long. The record of the risen Saviour partaking of food with His disciples, mentions "broiled fish and honey comb" (Luke xxiv. 42).

The statute books of ancient nations contain most stringent measures for the protection of bees. According to old Saxon law theft of a swarm was punishable with death. In modern times many famous German names are associated with bee culture, also names of Prussian patriotic bee men are on the same list. More lately American, Italian, English, and hosts of kindred nationalities furnish honoured names of those who have taken up apiculture, and brought to bear thereon modern ideas and scientific management. Lately introduced methods are now as vastly ahead of all former known modes of bee-keeping and honey production as railways and steamships are ahead of old modes of travel. Chief among modern improvements may be mentioned movable frame hives, manufactured wax foundation, the honey extractor, and having the bees to build and fill small section combs. Yet it may be anticipated that we are but on the threshold of other vast improvements in "the good time coming."

THE FEED QUESTION.

The following appeared in *Gleanings* (January, 1885), with Mr. Root's remarks:

WINTER FEEDING.

A most interesting article on sugar syrup for bees appears in the issue of November 15. Not only is the subject fully discussed by Mr. Doolittle, but your own extended remarks on the same are excellent. The one point, however, on which some of your numerous readers may, like myself, desire yet more light is the mode propounded for candy feeding, and the possibility of successfully operating any day in the year. Assuredly this, if so, goes far to solve the problem of food supply. We need not be alarmed on finding hives light, in going into winter quarters, or having neglected to feed in time, or in finding, during winter, supplies run low. Simply put on a few cakes of candy, and all is well. No more fussing with feeders. The point is, will this disturbance of putting on the congenial supply, and the excitement at finding such abundant and

suitable stores, not unduly stimulate, both rousing to activity or uneasiness, and to early brood-raising, then, likely resulting in spring dwindling?

This facility for feeding, any day in the year, looks decidedly like a pretty long stride in advance, if it can be as readily managed as indicated. There is yet another point that may need to be put a little more plainly. You speak of confectioners' sugar. Confectioners use various grades. The standard granulated is mostly regarded as the proper quality for feed syrup; but for this mixing with honey into the consistency of dough, a softer sort would seem more suitable, both for sticking together, and for the bees licking or chewing the more readily. These gritty grains must give much labour to nibble of; besides, they do sometimes carry out crystallized pieces as unmanageable. Might not a good quality of soft sugar be less objectionable? Then what about water for moistening? Wouldn't a little wide-mouthed bottle, with a piece of cloth over its neck, in the midst of the candy lump, be very convenient to wet their tongues occasionally? I mean to experiment a little in the given plan, and shall also hope to hear of others trying and succeeding on the line of this honey-dough idea.

Toronto, Dec., 1884.

JACOB SPENCE.

Friend Spence, this matter of putting a bottle of water near the lumps of candy was, as you may remember, discussed and experimented on most thoroughly some two or three years ago. As a rule, I do not believe it advisable to give bees water until you wish them to commence brood-rearing in the spring. The candy and sugar laid on the frames will not, I think, excite the bees to undue activity in winter.

BEE FEED AND FEEDING.

In "Gleanings" lately several experiments have been detailed and opinions expressed, which present favourably the placing of a mixture of sugar and honey, even in winter, on top of frames, some advocating candy and, when breeding is desired, an addition of a small proportion of fine meal or flour as substitutes for pollen.

The subject has been also treated by G. W. Demaree, in the *Kansas Bee-keeper*: I sometimes find a few colonies out of stores in the middle of the winter. In such cases I feed them "bee candy," or rather "sugar mash." Make a bag out of very thin cotton cloth, say five inches wide and eight inches long. Mix some sugar and water (extracted honey is better than water if you have it) together till you have a soft mass like dough, fill the bag till it will assume a flat form, and spread it right over the cluster of bees. If the bag is made of very thin material the bees will get at the most solid contents, after sucking out the thinner portion. Of course the bees must be kept warm by spreading some quilts over the tops of the frames and bag of sugar. I know of no cheaper and simpler way of keeping bees from starving in the winter and spring than this. This kind of feeding requires watchfulness to see that the feed does not give out and bees, feed and all, be lost. Keep up the supply.

Nearly all advanced bee-keepers seem to agree pretty well that no other investment in connection with the management of bees pays better than judicious, liberal spring feeding.

When you get stung go immediately and wash off the poison in cool water.

Be very careful never to leave any honey or other sweets around in the apiary when honey is scarce, as when bees once commence robbing it is hard to stop them.

The Grange Record.

OFFICERS OF ONTARIO PROV. GRANGE.

OFFICE.	NAME.	POST OFFICE.
Worthy Master	R. Currie	Wingham.
Overseer	Thos. S. McLeod	Dalston.
Secretary	A. Gifford	Menford.
Lecturer	D. Kennedy	Peterboro.
Treasurer	R. Wilkie	Blenholm.
Chaplain	D. Wright	Banks.
Steward	Thos. Henzen	Cashtown.
Asst. Steward	Wm. Brock	Adelaide.
Gatekeeper	J. P. Palmer	Fenelon Falls.

LADY OFFICERS

Coros.	Mrs. C. Moffatt	Edgeville.
Pomona	G. Lethbridge	Strathburn.
Flora	E. M. Cryster	Delhi.
L. A. Steward	J. McClure	Williscroft.

EXECUTIVE COMMITTEE.

Thomas S. McLeod, Esq.	Dalston.
Chas. Moffatt Esq.	Edge Hill.

AUDITORS.

W. H. White, Esq.	Chatham.
S. Bouchey, Esq.	Paisley.

DUTY OF PATRONS.

Patrons should "in honour prefer one another," for that is the only sure way of getting others to honour us. We must stand up for our principles and likewise, in so far as we may be able, stand up for those who have cast in their lot with us. Every individual who joins the Grange has a right to expect this and should be satisfied with nothing less. Nor is there anything wrong or improper in such conduct; no one is injured by it; no one is harmed in his pursuit, and no one has any right to utter a single word or complaint, for this is precisely what all other classes practise. Besides, by this course we strengthen the Order and cement the ties that bind us in unity. We are animated by a common purpose, impelled by a common motive, and anticipate, if faithful, a common good. There must be unity of action to secure success, and there can be no unity of action unless there is identity of purpose, and there can be no identity of purpose unless there is absolute confidence, and confidence is weakened unless we honour one another, for in so doing we honour the entire brotherhood and construct a bulwark of defence that will successfully resist all the efforts of our enemies and enable us to attain the full fruition of all our bright and joyful anticipations.

THE GRANGE AN EDUCATOR.

Patrons should bear in mind, says the *Journal of Agriculture*, that the great purpose of the Grange is that of an educator. Grange meetings, therefore, are school sessions, where something useful should be taught or learned. To secure this end in the highest degree there should be no idle talk, no speaking for the sake of being heard. Every utterance during the meetings should have a useful purpose in view, and those who cannot talk coherently and to the point should rather be attentive, patient listeners, that they may learn off the others. To forward the work of instruction and also of entertainment, some useful subject should be chosen at each meeting for consideration at the next, and it should be enjoined upon every member, old and young, male and female, that each should bear the chosen subject in mind during the intervals between meetings, read about it if practicable, talk about it on all seasonable occasions, and think about it always, in the field, on the farm, in the household everywhere. No better, worthier, higher, more useful and exalted thoughts have ever been evolved from human minds than such as come up behind the plough in the workshop, in the kitchen, the nursery, the parlour, on the wayside, attending the ordinary duties of life. Such should be the policy in the Grange, the practice everywhere. It is from the habit of thinking, not the purposed labour of thinking, that great learning is acquired and the farmer's bees he found that the owner had, the right answer should be interesting and useful.

introduce some useful topic in every Grange meeting, make it a duty to think of that subject, and thus develop the habit of thinking, from whence wells up wisdom?

THE PRESS AND THE GRANGE.

An American exchange contains the following: "We observe that the most earnest Patrons are ardent readers of Grange periodicals, and experience and observation justify the remark that no Grange lapses into a comatose condition whose members receive the weekly visitations of one or more periodicals devoted to the interests of the Order. We learn from this that one of the best ways of promoting advancement is by the wide dissemination of a literature adapted to the wants of Patrons. Of course the printed page should be supplemented by personal appeal, and when these two agencies are combined, success is also certain to follow. The absence of an influence that will quicken the activities and guide the efforts of those engaged in any cause is sure to bring disaster. The most potent influence of this character is the press, and we do wisely when we call it to our assistance. Other societies recognize this fact and use this power advantageously, and if we want to keep abreast of the times we must all do something to widen the circulation of those periodicals which make our interests objects of special care and attention. In no other way, nor by the adoption of any other means, can we accomplish this desirable end. Let every earnest Patron see that his brother takes an official paper of the Order, and do the utmost to extend its circulation beyond the boundaries of his Grange, and good results will follow."

We need not add that intelligent Patrons will be doing themselves and the interest they have at heart good service by helping to extend the circulation of *THE RURAL CANADIAN*.

A GOOD OMEN.

Should the French and Chinese hurry to explode all their heavy charges of gunpowder before spring opens, so as to give us an equable atmospheric pressure during the coming season, we may reasonably hope for another bountiful harvest in 1885. For many years we have not had snow so evenly distributed over the land, and not often a greater snow fall which is equal to so much added fertility of the right kind and in the right place. So far, over the Lake Huron district, we have had only one crust and that so porous that grains and grass have been able to breathe through it. No heating has taken place yet and, unless we shall have rain or sleet followed by freezing, the wheat will be apt to come out of winter in good shape. Since the ground was solidly frozen early in the winter, and has not thawed up to this date, 2nd of March, the chances are that, by the time the snow has partly melted, the frost will be out of the ground and the surface settled around the roots. The next circumstance in our favour is that before much snow fell a few heavy dashes of rain thoroughly wet the ground, thus ensuring one of the best conditions for keeping grain and grass roots in good healthy condition. Should spring open up well without dry cold winds, the harvest of 1885 may help to contract some of the long faces put on in 1883 and still visible. SEC., DIVISION GRANGE 24.

NOTES FROM THE NORTH-WEST.

Mr. Editor, - Can you oblige me by letting me have my *RURAL* somewhat earlier than last month. February was nearly out before it arrived. I value it, and as spring is coming, I am anxious to get every bit of information I can, although your writers and correspondents do not know anything of Manitoba farming. They have yet to learn like me. I gain something every number. I have thought that perhaps a statement about our conditions in the Northwest would be interesting and useful to your readers. In fact, it is the only one of the kind that (in all but name) the

weather might be of some interest to our reading farmers. So I enclose a part of February last. I only began to book it then although I have had a thermometer for years.

FEBRUARY 1885.

SUNRISE.			NOON, 1.30.			NIGHT, 8 pm.		
Below Z.	Above Z.	Wind.	Below Z.	Above Z.	Wind.	Below Z.	Above Z.	Wind.
16	30	N.W.	5	"	"	15	"	"
17	20	"	5	"	"	12	"	"
18	21	"	9	"	"	22	"	"
19	24	"	5	"	"	10	"	"
20	7	"	12	E.	"	10	E.	circle round moon.
21	15	N.	10	N.E.	"	5	"	"
22	6	S.	6	S.	S.	1	W.	"
23	4	N.W.	28	N.W.	"	4	S.W.	"
24	Z.	"	21	S.W.	"	10	"	"
25	4	"	28	"	"	19	"	C.
26	9	"	52	N.W.	"	1	S.E.	"
27	23	W.	40	"	"	30	N.W.	"
28	21	N.W.	38	"	"	22	N.	C.

OAK FARM.

Minncdosa, March 9th, 1885.

PRO. AND CON.

Every operation has its advantages and disadvantages, advocates and opponents, and the fermentation of manures is no exception to the rule. Some maintain that it is not only useful but necessary before it is put in the soil. Where weed seeds are in the fodder, heating will destroy them when care is used to get the whole mass properly warmed and kept in that state four or five days. But much care must be taken that the heat is not too great, or burning will follow; and that the pile be kept wet, or ammonia will escape and leave the manure of little value.

When many noxious weeds are not present, it will be found the safer plan, in the circumstances of the ordinary farmer, to use the manure in its fresh state, and allow the heating to take place in the land where the gases liberated by the heating will have a beneficial effect by their action on the mineral part of the soil; as any thing which induces chemical action in the land exerts a beneficial influence in liberating the elements of plant food that are often locked up in stubborn combinations of mineral compounds of lime or flint. Unfermented manure in soil acts somewhat like yeast in dough, tends to lighten and produce commotion in the mass, gives out the same kind of gas that causes bread to rise which, on clay soils especially, liberates the potash compounds in the soil. For a tenant with one or two years' lease, green manure will not be so profitable, as its results will be visible for twice his term of tenure, and the landlord or incoming tenant would share the profit. Where quick results are desired fermentation will commend itself; though some loss should be sustained in the process. Hence the impossibility of applying a cast iron rule. What will suit one case will not do for the next when

In clay land manure is tolerably safe in either state; in sandy land unfermented manure would not lose much during the winter, but well rotted would be apt to be washed too low down, except during the season of growth; and in the latter case would be better applied as a top-dressing to be worked in with the succeeding crop. Indeed, it may be laid down as almost a general rule that, except for carrots and mangels, spread broadcast and thoroughly worked into the surface is the best plan and place to put manure for all soils, seasons and crops. This is nature's plan and she seldom errs. She always puts it on in its unfermented state as a top-dressing, and allows heating to go on gradually, thereby mulching and manuring at the same time; and the crops she has raised by her system furnish the principal revenue of our Province as timber supply for the lumbermen and fuel for the farmers; as well as the thousand and one necessities of our Canadian home.

OBITUARY.

HENRY REED.

Few deaths we have to record outside of those occupying more prominent public positions will awaken more general or keener regret than that of Henry Reed, Esq., who died at his late residence in the township of Glanford on the 1st March last. His death is an irreparable loss to a large number of sorrowing relatives and friends, and in the circles in which he moved creates a void not easily filled. The deceased seemed to enjoy robust health until about two years ago, and at that time an observer would have predicted for him many years of active life. In the spring of 1882, he—in company with his brother and a neighbour, Mr. Shaw—visited some of the unsettled regions of the North-West, encountering some very severe weather on the prairies, during which they were compelled to camp out; and it is believed that the exposure and hardships then endured had the effect of undermining his constitution, though naturally vigorous; and while he was thus rendered more liable to the attacks of disease, his active and industrious habits and previous good health induced a disregard of those precautions and that thorough care which his changed condition required, and tended to hasten the end now so greatly deplored. At the regular meeting of Glanford Grange, No. 360, of which the deceased was a member, the following resolution was passed on March 26:

Resolved, that the members of this Grange, deeply lamenting the death of Brother Henry Reed, a much esteemed member of the Order of Patrons of Husbandry, desire to express their deep sense of the loss sustained not only by the Grange but by the entire community in his removal by death, and hereby tender their respectful and sincere sympathy and condolence to the widow and family of the deceased in their bereavement; and that the sense of this resolution be conveyed to Mrs. Reed, and copies of the same be transmitted to THE RURAL CANADIAN and Grange Bulletin papers for publication.

GENERAL MEETING OF THE ONTARIO PEOPLE'S SALT MANUFACTURING COMPANY (LIMITED).

The first general meeting of the above Company was held at the Company's office in Kincardine, on Wednesday, February 11th, at 2 p.m.

On account of the snow blockade, no rail communication with Kincardine was possible, and large numbers were snowbound at different points, waiting for the trains to run to enable them to reach the meeting. Only a few who had driven had as yet been able to get there.

Mr. R. J. Doyle, Provisional Chairman, took the chair, and announced that he was in receipt of numerous telegrams from parties snow-bound, asking for an adjournment that they might reach the meeting. When on motion of A. Gifford

seconded by H. Reid, the meeting adjourned till 10 a.m., on Thursday, Feb. 12th.

KINCARDINE, Feb. 12th, 10 a.m.

General meeting assembled as per adjournment, Mr. R. J. Doyle in the chair. He reported that no trains had yet arrived, and that the blockade still continued when on motion of Mr. Gifford, seconded by Mr. Kippen, a further adjournment was agreed to till 3 p.m. to-day.

3 p.m., Feb. 12th, 1885.

Meeting again assembled and adjourned till 7 p.m., as blockade still continued, and recommended an adjournment till the 18th of March, in order to give an opportunity for all who desire to be present.

7 p.m., Feb. 12th, 1885.

Meeting again assembled at the Royal Hotel. Quite a number had arrived, but not nearly all who were on the way, and a further adjournment was granted till the 18th at 10 a.m.

ROYAL HOTEL, Feb. 18th, 10 a.m.

General meeting assembled as per adjournment Mr. R. J. Doyle, Provisional Chairman, in the chair. Quite a number of stockholders having arrived, the question of adjournment to Toronto was considered, when D. Kennedy, on behalf of a committee appointed by the Board to obtain a legal opinion as to the validity of an adjournment to a future time at Toronto, to give an opportunity to all that wished to attend, reported that the committee had waited on W. C. Loscombe, barrister, and produced a letter from him saying that any adjournment to a different place would be illegal, as the place had been fixed by by-law under the statute, and advertised, and must be held there to be legal, upon which it was decided to proceed with the meeting.

The Secretary then proceeded to read the report of the Directors and Auditors, which was discussed clause by clause and adopted, and one thousand copies ordered to be printed for distribution. Messrs. Cheyne, Reid, and Currie were appointed to examine proxies and voting list and report.

The adoption of the Company's By-Laws was next taken up, when the Secretary, Mr. Hilborn, proceeded to read the code as adopted by the Board, which was considered clause by clause and adopted, with some few amendments and additions, and on motion was adopted as a whole.

Mr. Glazebrook moved, seconded by Mr. J. Ramsey, that the next annual meeting be held at Toronto the day previous to the meeting of the Provincial Grange.

James McBeath moved, seconded by J. Kippen, that it be held at Kincardine.

Mr. Hutton moved, seconded by Mr. Shaw, in amendment to the amendment, that the next meeting be held at Guelph.

Original motion carried.

Mr. L. Cheyne, on behalf of the committee on proxies and voting list, submitted a report showing 456 shares represented, in person and by proxy, that were entitled to vote, which on motion was adopted.

Quite a lengthy discussion took place respecting the price of salt and the manner of sale. Quite a large number favoured selling to none but stockholders, and the Board was requested to consider seriously the propriety of confining the sale to them exclusively.

The meeting then proceeded to the election of Directors, when the following nominations were made:—Jabel Robinson, E. H. Hilborn, L. Cheyne, D. Kennedy, R. Currie, J. Tolmie, A. Gifford, R. McMordie, R. J. Doyle, W. Clark and H. Glazebrook.

A ballot was then taken which showed the

following to be elected, viz.: John Tolmie, E. H. Hilborn, D. Kennedy, H. Glazebrook, L. Cheyne, R. J. Doyle, R. McMordie, R. Currie and Jabel Robinson.

Mr. Glazebrook immediately tendered his resignation, and refused emphatically to serve as a director, whereupon the meeting accepted his resignation and seated Mr. W. Clark as being next on the list, which left the Board as follows:

Elected for two years, Messrs. Tolmie, Hilborn, Kennedy, Cheyne and Doyle; elected for one year, Messrs. McMordie, Currie, Robinson and Clark, who were so declared elected by the Chairman.

The Chairman then called on the meeting to elect an Auditor, when Mr. A. Gifford was declared elected, and after some further discussion upon the success of the Company and its future policy, in which the greatest unanimity prevailed, some resolutions of thanks and a host of congratulations brought the meeting to a close.

The new Board immediately met and appointed Mr. R. J. Doyle, President; Mr. L. Cheyne, Vice-President; Mr. E. H. Hilborn, Secretary; and Mr. John Tolmie, Manager of the works; and also by resolution carried out the recommendations given at the annual meeting not to sell salt to any one but stock-holders.

GRANGE MEETING.

Elgin Division Grange met in the Court-House, St. Thomas, on the 20th inst.

Granges represented were Apple Grove, Forest Rose, Lorne, Union, Mayflower, Gordon, Dufferin and Bayham. Bro. Cameron reported at length on the proceedings of the Provincial Grange, showing the many advantages of representatives of the farmers meeting together in Council.

Bro. Robinson reported the proceedings of the Dominion Grange.

The following resolution of condolence was adopted and ordered to be engrossed and framed:

To Bro. JABEL ROBINSON:
We, your friends, brothers and sisters, offer you and your family our sincere sympathy for the great and irreparable loss you have sustained by the death of your beloved wife and our respected sister. We grieve for you in your great bereavement, for we have also lost in her a steadfast friend, and although our grief cannot be compared to yours, it is deep and sincere. We cannot forget that our late sister was a charter member of this Grange, that she was elected as Pomona at its first meeting. She was faithful and active in every good work; and, as all can testify who enjoyed the favour of her acquaintance, she was blessed with all those virtues which adorn and dignify a woman, a wife and mother.

(Signed) B. F. HATHAWAY, EWEN CAMERON.
A resolution was carried to hold a Farmers' Institute in St. Thomas next January, under the auspices of the Grange, and that the professors of the O. A. C. be invited to attend. Bros. Hathaway, Cameron and Robinson, Sisters Payne and H. Robinson were requested to read a paper on the occasion.

The Executive Committee was instructed to confer with neighbouring divisions for the purpose of holding a monster picnic somewhere in the West. It was also decided to run an excursion from Elgin to Kincardine to visit the Grangers' salt works during this season.

At this season of the year it is necessary that poultry should be fed vegetables at least thrice each week. Cabbage forms the best diet, but if too expensive or difficult to obtain, a good substitute will be found in mangels, turnips, or even sliced potatoes. Care should be taken to see that this description of food is not frozen, many careless keepers of poultry will look into the coop, and seeing the vegetables, lying around, will say, that they have plenty of green food; no use giving them any more. Whereas very little trouble would tell them that the roots are, perhaps, frozen as hard as stones. Give a little and often; removing the old before feeding fresh.

HOME CIRCLE.

THEY MET BY CHANCE.

"Your Aunt Carleton and Cousin Jennie will be here on the next train, Russell," said Mr. Wilder to his nephew. "You had better take the pony chaise and bring them from the depot."

"Can't. Am going away myself, sir."

"The deuce you are!" responded the old gentleman, pushing his spectacles up over his forehead and regarding his nephew with an air of surprised consternation.

"Yes, sir. Charley Hunt invited me out to his place for a few weeks, and I thought that I might as well go now as any time."

"I should say that it was a very strange time to be leaving home. Your aunt and cousin will consider it a personal affront, sir!"

"It is not intended as such, sir. Though, to be frank, considering the object of Cousin Jennie's visit, I prefer not to see her. And I must say that she would have shown more sense and delicacy if she had stayed away."

"Your cousin is a very lovely girl, Mr. Impudence, and won't be likely to go a-begging."

"I don't doubt it in the least. But for all that, she won't suit me for a wife, uncle."

"How do you know that, you conceited young donkey, when you have never seen her?" enquired the irate old man, bringing his cane down upon the floor with startling emphasis.

"Common sense teaches us that no marriage can be a happy one that does not spring from mutual love. And on one thing I am resolved—that I will never marry from mercenary motives."

"Nobody wants you to marry the girl unless you like her!" roared Mr. Wilder, his face growing purple with rage and vexation at his nephew's perversity. "All I ask is that you will stay and see her. And this is a point I insist upon—yes, sir, I insist upon it!"

"I am sorry to disoblige you, uncle; but if I should stay it will only give rise to conclusions that I am anxious to avoid. But I tell you what I will do; I will relinquish all claims to the property you are so anxious should not be divided. As that seems to be the main object, I think that it ought to be satisfactory to all parties."

A few minutes later Russell passed by the window, valise in hand.

He nodded good humouredly to his uncle as he glanced in, who glared after him in speechless rage.

"He shan't have a penny—not a penny!" he growled as, sinking back in his chair, he wiped the perspiration from his forehead.

"What's the matter now?" said the gentle voice of his wife Polly, who had just entered the room.

"Matter enough, I should say. Russell has gone—actually cleared out so as not to see his cousin. What d'ye think of that?"

"I think you'll have another attack of the gout if you get yourself excited," said the good lady, as she placidly resumed her knitting.

"What is to be done?"

"Nothing that I can see. If Russell and Jennie had seen each other before they had any notion that you wanted them to marry, ten to one but that they would have fallen head and ears in love with each other; but as matters are now I don't believe it would be of the least use. From what Ellen writes me I should think Jennie to be as much opposed to it as Russell. She says that she can't bear to hear his name mentioned, and that it was as much as she could do to get her to consent to come at all when she heard that Russell was at home."

"They are a couple of simpletons," said the

make another will and leave my property to some charitable institution."

In going to Dighton, whither he was bound, Russell Wilder had to travel part of the way by stage.

There was only one passenger besides himself, for which he was not sorry, the day being very hot and sultry.

This passenger was a lady—there was an unmistakable air of ladyhood about her which told him that. He noticed particularly the daintily gloved hands and well fitting boots.

Her graceful form indicated that she was both young and pretty, but he could not see her face on account of the envious veil that hid it.

But as soon as she got comfortably settled in the corner to which Russell gallantly assisted her, she threw it back, disclosing a fair, sweet face, lighted up by a pair of wondrously bright black eyes, which shot a swift bewildering glance into those who were so intently regarding her.

The sudden starting of the coach, which sent some of the lady's parcels from the seat to the floor, gave Russell an opportunity of speaking as he returned them, of which he was not slow to take advantage.

From this they fell into easy conversation, and it was curious how sociable they became.

They talked of the beautiful scenery through which they were passing; of the newest books and latest magazines, some of which Russell had with him.

The lady inwardly thought her companion to be the most entertaining and agreeable man she ever met with. And as for Russell, he often lost the thread of his discourse in admiring the red, dimpled mouth and the pearly teeth disclosed whenever she spoke or smiled.

Certain it is that his four hours' ride from P— to Dighton were the shortest four hours he had ever known in his life.

"Where do you want to be left, sir?" enquired the coachman as they entered the village.

"At Mr. Charles Hunt's, Lotus Hill. Do you know where that is?" said Russell, putting his head out of the window.

"Certainly, sir; take you there in a jiffy."

"Why, there's where I'm going," said the lady, opening her eyes widely. "Nellie, Mr. Hunt's wife, is my most particular friend; we used to go to school together."

"And Charlie Hunt is my most particular friend, and one of the finest fellows in the world."

"How very odd!"

"How very fortunate!" exclaimed Russell, with a meaning glance at his fair companion, which made the rosy cheeks still more rosy. "Might I take the liberty of inquiring—"

But just at that moment the stage stopped in front of the house, on the portico of which stood Mr. and Mrs. Hunt enjoying the evening breeze.

In a moment Russell was shaking hands with the former, while his companion rushed eagerly into the arms of the surprised and delighted wife.

"Why, what a happy surprise, Jennie!" she said, after spiriting her visitor off to her own room; "I had given up all idea of seeing you this summer."

"And I had no idea of being able to come until just before I started. You see, mamma—my step-mamma, you know—was going to Uncle Wilder's, and she insisted on my going with her to see the hateful, disagreeable prig of a cousin of mine that they are determined to marry me to. So when mamma was busy packing, I just put on my things and slipped off, leaving them a note to tell where I was going. Wasn't that a good joke on them all?"

burst of merriment, for more than the occasion warranted. "When I saw who your companion was I thought you were out on your wedding tour."

"No, indeed; never saw the man until he got into the stage at P—. But, really, he is the finest looking man I ever saw, and so agreeable. Who is he?"

"Oh, I will introduce you when he comes down stairs. There's Sarah waiting to see me about supper. You'll have only time to dress. Mind and look your prettiest."

And with a roguish shake of her finger at her friend Nelly ran away to see about the supper.

If Jennie did not "look her prettiest" she certainly looked very lovely as she entered the supper room, her linen suit exchanged for a fresh, soft muslin, whose simplicity and purity were relieved by the violet-coloured ribbons in the hair and throat. Russell had also taken great pains with his toilet, as could be seen by his spotless linen and carefully arranged hair. The pause that followed Jennie's entrance was broken by Mr. Hunt, who, in response to a meaning glance from his wife, said:

"Russell, allow me to introduce you to your cousin, Jennie; Miss Carleton, your cousin Russell Wilder."

The embarrassment which followed the blank astonishment into which this announcement threw the parties, so unexpectedly made known to each other, was quickly dispelled by the turn that was given it by their host and hostess.

"I suppose you'll want to book yourself for the next stage!" said Mr. Hunt, slyly, to Russell, who had been taken into his friend's confidence.

"And you," said his wife, turning to Jennie, "I don't suppose anything could tempt you to remain, now that you are to have that hateful, disagreeable—"

"Nellie!" interrupted Jennie, crimsoning, as she remembered her words.

"Well, I won't then. But you must let me laugh. Just to think of you both running away from each other and running in the same direction and to the same place."

The ringing laugh that burst from Nellie's lips was too contagious to be resisted even by those at whose expense it was raised.

This merriment was followed by a general good feeling, and a pleasanter tea party never gathered around the social board. We need hardly say that Russell did not take the stage next morning, nor did Jennie seem at all disposed to cut short her visit on account of her cousin's unexpected appearance.

When they did go they went, as they came, together. Mr. Wilder's astonishment was only equalled by his delight, on looking out of the window to see the two walking up the path toward the house, arm in arm, and apparently on the best of terms.

As for Russell and Jennie they seemed to regard this unexpected meeting as an indication of their "manifest destiny," accepting it as such, much to the joy of their uncle, whose darling wish was accomplished in the marriage of the two, thus made happy in spite of themselves.

A REMEDY FOR BURNS AND POISON.

We are exceedingly sensitive to the poisonous effects of the "poison ivy" (*Rhus Toxicodendron*), and have tried a multiplicity of remedies said to be specifics, but have found nothing equal to the remedy given below for burns and applied in exactly the way named.

It is now many years ago (see the London *Medical Gazette* of March, 1844,) that the author of this paper, while engaged in some investigations as to the qualities and effects of the alkalies, prepared a remedy that (in all instances) the

lies in inflammations of the skin, etc., was fortunate to discover that a saline lotion, or saturated solution of the bicarbonate of soda in either plain water or camphorette water, if applied speedily, or as soon as possible, to a burned or scalded part, was most effectual in immediately relieving the acute burning pain and, when the burn was only superficial or not severe, removing all pain in the course of a very short time; having also the very great advantage of cleanliness and, if applied at once, of preventing the usual consequences—a painful blistering of the skin, separation of the epidermis, and perhaps more or less of suppuration.

For this purpose all that is necessary is to cut a piece of lint or old soft rag or even blotting paper of a size sufficient to cover the burned or scalded parts, and to keep it constantly well wetted with the soda lotion so as to prevent its drying. By this means it usually happens that all pain ceases in from a quarter to half-an-hour, or even in much less time.

When the main part of a limb, such as the hand and forearm or the foot and leg, has been burned, it is best, when practicable, to plunge the part at once into a jug or pail or other convenient vessel filled with the soda lotion, and keep it there until the pain subsides; or the limb may be swathed or encircled with a surgeon's cotton bandage previously soaked in the saturated solution and kept constantly wetted with it, the relief being usually immediate, provided the solution be saturated and cold.

What is now usually sold as bicarbonate of soda is what I have commonly used and recommended; although this is well-known to vary much in quality, according to where it is manufactured—but it will be found to answer the purpose, although probably Howard's is most to be depended on, the common carbonate being too caustic. It is believed that a large proportion of medical practitioners are still unaware of the remarkable qualities of this easily applied remedy which recommends itself for obvious reasons.

A BROKEN-HEARTED BIRD.

A correspondent thus writes—"Nearly twenty years ago I owned a pair of beautiful canaries—the male being a very fine fellow, with a rich muslin note. Having furnished them with the outside rough form of a nest in straw, leaving them to complete its comforts with bits of soft wool, down and small feathers, they were shortly in the happy possession of four eggs. In due course four young ones presented themselves, to the evident delight of the parents, who fed them from daylight to dark, their favourite food being the yolk of hard-boiled eggs. Time brought round the period when, instead of raw, naked, helpless creatures always "asking for more," four full-fledged young birds frisked about the cage like so many pretty yellow balls of fine soft wool. They grew to be very fine birds, and first one friend and then another coveted them, until all had gone but one little youngling, which remained as the only solace of the parents. This last of the family was the delight of their hearts; they fondled it and played with it as we have seen an affectionate mother do with her child, and seemed to exert themselves to amuse it in every way their fancy prompted.

Probably a happier little family never existed. But, alas! the spoiler came. Another friend coveted the last of the little flock and it was taken away. And from that moment the joyous song of the male bird gave place to a painfully feeble little chirp. He sat on the perch with a drooping, heart-broken, spiritless aspect; his wings hung down as if all power and vitality had

time of his bereavement he fell dead from the perch. The affectionate creature had evidently died of grief for the loss of his "one ewe lamb." The cage was given away, with the remaining bird; and no inducement could tempt me again to run the risk of perhaps unconsciously being the cause of so much unhappiness and misery.

A YEAR'S WOOING.

'Twas autumn when first they stood on the bridge,
Ripe pears on the pear tree, ripe corn on the ridge,
The swallows flew swiftly far up in the blue,
And speeding still southward, were lost to the view.
Said he: "Can you love me, as I can love you?"
She said, quite demurely: "Already I do!"

'Twas winter when next they met on the bridge,
The pear trees were brown, and white was the ridge;
The swallows were feathering their nests in Algiers.
She looked in his face, and she burst into tears!
His nose it was pinched, and his lips they were blue.
She said: "I can't love you!" Said he: "Nor I you!"

'Twas spring-time when next they stood on the bridge,
And white was the pear tree and green was the ridge,
The swallows had thoughts of a speedy return,
And the midges were dancing a-down the brown burn.
He said: "Pretty maiden, let by-gones go by—
Can you love me again?" She said: "I can try."

'Twas summer when next they stood on the bridge,
There were pears on the pear tree, tall corn on the ridge;
The swallows wheeled round them, far up in the blue,
Then swooped down and snapped up a midgelet or two.
Said he: "Least some trifle should come in the way,
And part us again, will you mention the day?"
She stood, looking down on the fast-flowing rill,
Then answered, demurely: "As soon as you will!"

—Chambers's Journal.

BAKING BREAD.

I think there are comparatively few who realize how very important it is that the oven should be of just a proper heat when the bread is first put in. An experienced baker once told me that of all the conditions necessary to good bread none was of more importance than the temperature of the oven. Bread and rolls raised with yeast do not require so great a heat as if made with saleratus or baking-powder. No matter how much care has been given to the mixing of such bread, if the oven is not sufficiently hot it will not be light. If there is any place where a thermometer is needed it is an oven, to guide the cook in the matter of getting a correct heat. But since we are not blessed with such a convenience each person must experiment for herself and adopt such plans for her guidance as she may think best. When making any kind of bread that must be immediately baked, the oven should be heated before mixing the dough, so that the instant it is ready it can be put in. I never place the tin on which the bread is baked on the bottom of the oven, but it is elevated by a thin, open grate, which allows the hot air to pass under the tin, and the bottom of the bread is evenly baked and the danger of its burning is avoided.

HEART BEATS.

Dr. B. W. Richardson, of London, the noted physician, says he was recently able to convey a considerable amount of conviction to an intelligent scholar by a simple experiment. The scholar was singing the praises of the "ruddy bumper," and saying he could not get through the day without it, when Dr. Richardson said to him:—

"Will you be good enough to feel my pulse as I stand here?"

He did so. I said, "Count it carefully; what does it say?"

"Your pulse says seventy-four."

I then sat down in the chair and asked him to count it again. He did so, and said, "Your pulse has gone down to seventy."

I then lay down on the lounge, and said:—

"Will you take it again?"

He replied, "Why, it is only sixty-four; what

I then said, "When you lie down at night, that is the way nature gives your heart rest. You know nothing about it, but that beating organ is resting to that extent; and if you reckon it up it is a great deal of rest, because in lying down the heart is doing ten strokes less a minute. Multiply that by sixty, and it is 600; multiply it by eight hours, and within a fraction it is 5,000 strokes different; and as the heart is throwing six ounces of blood at every stroke, it makes a difference of 30,000 ounces of lifting during the night. When I lie down at night without any alcohol, that is the rest my heart gets. But when you take your wine or grog you do not allow that rest, for the influence of alcohol is to increase the number of strokes, and instead of getting this rest you put on something like 15,000 extra strokes, and the result is you rise up very seedy and unfit for the next day's work till you have taken a little more of the "ruddy bumper," which you say is the soul of man below."

A MATHEMATICAL GENIUS.

The Philadelphia *Enquirer* tells an interesting story of a man in Pennsylvania, named Samuel Duncan, who performs wonderful feats in figures. He lays no claim to learning, yet college students go to him for assistance when they get beyond their depth in mathematics. The following is a problem that baffled the ability of all the students of the University of Pennsylvania, which Mr. Duncan solved in forty minutes:—

Take a room forty feet long and thirteen feet wide, what is the longest piece of carpet one yard wide that can be laid on it without cutting? The answer is 42.06, but there is no known rule of algebra by which it can be determined. He has been offered by a student \$25 for the process of solution.

Another, and one requiring more time and figures in its solution, is this:—

A pole is sixty feet high, at the top it is seven inches in diameter, and at the base ten inches; given that 720 coils of rope are wound around the pole, how far will a man walk in unwinding it? The answer given by Mr. Duncan is 360 miles. It is said that he can perform two different problems at the same time, one with his right hand and the other with his left. These problems may be interesting for some of our students to think about.

THE PROPER WEIGHT OF MAN.

Professor Huxley gives the following table of what a full grown man should weigh, and how this weight should be divided:—Weight, 154 pounds, made up thus: Muscles and their appurtenances, sixty-eight pounds; skeleton, twenty-four pounds; skin, ten and one-half pounds; fat, twenty-eight pounds; brain, three pounds; thoracic viscera, three and one-half pounds; abdominal viscera, eleven pounds; blood which would drain from body, seven pounds. This man ought to consume per diem. Lean beefsteak, 5,000 grains; bread, 6,000 grains; milk, 7,000 grains; potatoes, 3,000 grains; butter, 600 grains; water, 22,900 grains. His heart should beat seventy-five times a minute, and he should breathe fifteen times a minute. In twenty-four hours he would vitiate 1,750 cubic feet of pure air to the extent of one per cent; a man, therefore, of the weight mentioned ought to have 800 cubic feet of well-ventilated space. He would throw off by the skin eighteen ounces of water, 800 grains of solid matter, and 400 grains of carbonic acid every twenty-four hours, and his total loss during the twenty-four hours would be six pounds of water and a little over two pounds of other matter.

A ROLLING STONE GATHERS NO MOSS.

Words and Music by FRED. McAVOY.

Arr. by CHAS. L'ORAGE.

1. Now we all do our best in this world to get on, While some think they're
 2. Now in lands far a-way, I've heard peo-ple say, That dia-monds like
 3. Now in roam-ing a-round, there can nev-er be found, The com-forts we

aw-ful-ly clev-er,..... If you heed what they say you may go the wro-
 stars can be found, And that dia-monds like stars are in the ground hid a-
 find when at home; Then why do we leave friends be-hind us to

way, Don't be led by your friends in the fu-ture..... Some say, go a-
 way, With thousands of searchers a-round..... If it's gold you would
 grieve, And wan-der a-way all a-lone?..... My ad-vice now to

-broad, and a for-tune you'll make, While oth-ers have roam'd to their loss, So you
 seek, you must first per-so-vere, For the o-cean's a wide one to cross, So you
 you, and be-lieve me, 'tis true, If you wan-der, 'twill be at your loss, So

may just as well now re-main where you are, For a roll-ing stone gath-ers no moss.....
 may just as well now re-main where you are, For a roll-ing stone gath-ers no moss.....
 mind what I say, stay at home don't go 'way, For a roll-ing stone gath-ers no moss.....

The farmer's bees he found that the owner had the right answer should be interesting and useful experience can be gained by those who are interested in the subject. In fact, it is a good idea to have a few bees in all backyards.

A SERMON IN RHYME.

If you have a friend worth loving,
Love him. Yes, and let him know
That you love him ere life's evening
Tinge his brow with sunset glow;
Why should good words no'er be said
Of a friend—till he is dead?

If you hear a song that thrills you,
Sung by any child of song,
Praise it. Do not let the singer
Wait deserved praises long;
Why should one that thrills your heart
Lack the joy it may impart?

If you hear a prayer that moves you
By its humble, pleading tone,
Join in. Do not let the speaker
Bow before his God alone;
Why should not your brother share
The strength of "two or three" in prayer?

If you see the hot tears falling
From a loving brother's eyes,
Share them, and by sharing,
Own your kinship with the skies;
Why should any one be glad
When his brother's heart is sad?

If a silver laugh goes rippling
Through the sunshine on his face,
Share it. 'Tis the wise man's saying,
For both grief and joy a place:
There's health and goodness in the mirth
In which an honest laugh has birth.

If your work is made more easy
By a friendly, helping hand,
Say so. Speak out brave and truly,
Ere the darkness veil the land.
Should a brother workman dear
Falter for a word of cheer?

Scatter thus your seeds of kindness,
All enriching as you go—
Leave them, trust the Harvest-Giver;
He will make each seed to grow.
So, until its happy end,
Your life shall never lack a friend.

MY LITTLE BOY THAT DIED.

Look at his pretty face for just one minute!
His braided frock and dainty buttoned shoes—
His firm-shut hand, the favourite plaything in it—
Then tell me, mothers, was't not hard to lose
And miss him from my side—
My little boy that died?

How many another boy, as dear and charming
His father's hope, his mother's one delight,
Slips through strange sicknesses, all fears disarming,
And lives a long, long life in parents' sight.
Mine was so short a pride!
And then—my poor boy died.

I see him rocking on his wooden charger;
I hear him pattering through the house all day;
I watch his great blue eyes grow large and larger,
Listening to stories whether grave or gay,
Told at the bright fireside—
So dark now—since he died.

But yet I often think my boy is living,
As living as my other children are.
When good-night kisses I all round am giving,
I keep one for him, though he is so far.
Can a mere grave divide
Me from him—though he died?

So, while I come and plant it o'er with daisies—
(Nothing but childish daisies all year round)—
Continually God's hand the curtain raises
And I can hear his merry voice's sound,
And feel him at my side—
My little boy that died.

—Selected.

THREE BOYS.

"Wint is having a rough time of it, trying to climb up Zion's hill. He'd better backslide and be done with it. He'll find it more comfortable!"

"You see he's trying an impossibility. How is it the Bible has it? To 'serve two masters.' Yes, and it says, likewise, it can't be done. All the same, poor old Wint is trying hard to—"

"Serve one and get the credit of serving the other," said Joe, finishing Bert's speech. "Pshaw! I'm sorry."

The two lads lay in the shadow of a haystack, this fair vacation day, cooling off after their chase of a fleet hare.

Wint had been with them in the start, but as they turned a fence corner, all in a bunch, Joe's and Wint's heads had come into violent collision, and Wint, becoming very angry, said some coarse, bad words, and

the dog, had caught the hare, the boys had skinned and dressed it, and carried it to the house, and having refreshed themselves with a drink of buttermilk, had gone out into the backyard to loll a bit for a bit before the noonday meal. Wint was nowhere to be seen. They whistled, but no answering whistle came.

"He's mad yet, let him go," said Bert, as he threw himself lightly on the loose hay at the foot of the fragrant stack. "He's got a mean temper."

"Seems to me he uses a lot of bad words for a professor," Joe answered.

And then Bert had made the declaration referred to in our first sentence.

"I believe you," said Bert, in reply to Joe's 'I'm sorry.' "So am I sorry. I used to think Wint was in earnest, and meant to practice what he professed, but I've about changed my opinion. I don't pretend to be a Christian and let my light shine, and all that, but I'd be ashamed to do some things that Wint does—get mad as fury at nothing, and then be too mulish to own that I was in the wrong when I was convinced of my mistake. And—well—it's mean to be cutting up a fellow behind his back. Don't let's say any more."

"No," said Joe, slowly, "we won't. Only I'm sorry Wint has petered out so. He had an opportunity—and he's missed it. You see when Wint stood up there and gave his experience, and talked so nice in that prayer-meeting, you remember, he talked just the way I felt, precisely, only I couldn't have got it off in that slick fashion. And I said to myself, 'Now, old Joe, if Wint stands up to all that and makes a good fight, and comes out ahead, why, you'll start in, that's all.'"

"Why didn't you go in then, if you felt that way?" asked Bert, turning his astonished eyes on his companion. "You act enough more like a Christian than Wint does."

Joe shook his head, "I was afraid I wouldn't hold out. Wint is smarter than either you or me. I thought it was well enough to let him try first. If he held out—then—"

"Yes," said Bert, "he'd have been a help to us, I know. I thought of it, too, at the time. But it looked to me as if there ought to be some change in a fellow when he professed to be converted and born again, and starting in a new life."

"He isn't making much progress in the Christian life, certain," trying to laugh. "He'd better do as I said, backslide and done with it. Then he won't be a hypocrite, and that's what he is now, or I'm—but there, we said we wouldn't backbite, and here I am at it again. Come on, let's run down to the pond and take a paddle. Dinner won't be ready for a half-hour."

Dinner time came, and Joe and Bert, fresh from their bath in the mill-pond came too. They had quite forgotten the slight collision of the hare-hunt, and wondered that Wint was not on hand, especially as he knew there was to be a peach pudding for dessert. Joe called, Bert whistled, and Phillis blow the tin horn, but no Wint responded to either familiar summons.

"He must have gone up to the apple picking at Sykes's," said Joe's uncle. "The Sykes boys were over here about eleven o'clock, and I saw Wint coming across the barn-yard just as they came in the big gate."

After dinner Joe and Bert went into town to do some errands for Joe's uncle, on whose farm the three lads were visiting. They did not return till late.

"What sent Wint off in such a hurry?" asked Uncle Joe, as they sat down to the supper that was waiting them. "No bad news, eh?"

"Wint? Is he gone?" the lads asked in one voice of surprise.

"Packed his traps and left on the three o'clock train. Looked mighty down in the mouth, but said you boys would understand."

The boys did not understand, however, until they went to their room at night.

"I do wonder what happened to Wint?" was Joe's first word on entering their snugery.

"Perhaps this will tell," said Bert, as his eyes fell on a note, addressed, in Wint's bold hand to "Bert and Joe."

"Read it, Joe."

And Joe read:

"Dear Fellows: Forgive me. I'm going home; I'm not fit to stay for you. The dog was all the

harm I am willing to do. I ask your forgiveness, and beg you not to think that there is nothing worth having in religion because I have disgraced my profession. I was on the other side of the haystack, where—you won't believe me, but it's true—I was kneeling and praying for help to conquer my hateful temper and to control my wicked tongue, when you two came there. I heard all you said. If you are right Bert, and I am only a hypocrite, then, may God be merciful to me, a sinner. There is no other prayer that I can pray. But if, as I humbly trust, in spite of all my wicked disloyalty, I am a disciple of Christ, then, too, I must pray, God be merciful to me, and forgive me that I have so dishonoured my Saviour. O fellows, can't you help me? I know that I ought to have been a help to you, and I've only been a hindrance. But I did want to live so as to win you both to Christ. I have missed my opportunity, as you say, Joe, and what can I do now but pray that you may not miss yours, and that my extremity may prove to be God's opportunity? Oh, pray for me, I am very wretched; what you said this morning, Joe, in answer to my cruel coarseness, opened my eyes. I saw myself as you see me, and hate myself. Of course, after the way I have lived, and the dead failure I have made in the Christian life, nothing that I can say will be likely to influence you, yet I will say that if I never tried before to 'climb up Zion's hill,' I mean, by God's help to try now. O fellows, I love you both, and I ask your pardon for all the harm I have done you. If you love me, forgive me, and pray for your penitent
WINT."

Joe's voice had trembled as he read. As he concluded he raised his eyes to Bert's, and saw them filled with tears.

"I declare, Joe, I wouldn't have hurt the old fellow's feelings so for anything," said Bert, gulping down a sob.

"I don't know," said Joe, "maybe it was best. Wint does not lie; it cost him dear to ask our pardon so humble. I believe in him, after all. And I am not so sure he has altogether missed his opportunity. I think we might do worse than to pray for him, and for ourselves too."

"So do I," said Bert, turning away.

After a few moments he came over to the table beside which Joe yet stood, re-reading Wint's confession and appeal.

"I say, Joe," he began, in a low voice, "shall we write to Wint and promise him that we will?"

"Pray for him and for ourselves? Yes. Only it will be more comfort to him to hear that we had prayed. I was horrid mean this morning, answering him so."

"And I was mean, saying he'd better backslide, and all that," added Bert. "I ought to ask his pardon."

"Bert," said Joe, seriously, "let's join in, and help one another. You know the Bible says, 'a threefold cord is not quickly broken.'"

"Well," said Bert, "I will."

The boys fell on their knees, and Joe prayed aloud.

Bert joined in the Amen with earnest voice. They rose from their knees and clasped hands in token of a new and sacred fellowship.

A few days later, Wint read a letter signed by Joe and Bert, telling of their new resolve, their prayer for him, and their fellowship with him. And when he had read it he laid his head upon his arm and cried for joy. For he received it as a word of forgiveness and assurance from the Saviour whom he had so wronged, and to whom he had so earnestly cried, that for His own mercy's sake he would not suffer his disloyalty to destroy the souls or hinder the conversion of the friends he loved.

From that hour Wint was a loyal soldier of the cross. And daily he thanks God that his extremity was so signally made God's opportunity for the salvation of the souls of Bert and Joe.

And the threefold cord still holds.—*Christian at Home.*

YOUNG MEN!—READ THIS.

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YOUNG CANADA.

GHOSTS.

BY JIMMY BROWN.

We have a ghost in our house. He has been there for nearly a week, but we haven't seen him yet.

Ghosts live in old houses, and you scarcely ever find them in a new house. They live in the wall, just like mice, and never come out in the daytime. You might stay in a house that was full of ghosts, all day long, and you wouldn't see one, but just as soon as it gets dark, and everybody has gone to bed, and the house is still, the ghosts come out.

A ghost could get through a hole that a mouse couldn't get through. This is because a ghost is made of something like fog, that can be squeezed up into almost nothing. Sometimes a ghost will squeeze through a hole in the wall not morianich wide, and after it gets out it will swell up and look as if it was six feet high and as thick as a fat man.

Mr. Travers says that when once ghosts get into a house it is impossible to get them out again. You may stop up all the holes in the wall, but the ghosts will make new ones, or else hire mice to do it for them. It doesn't do any good to put poison in the holes, either, for a ghost is dead before it gets to be a ghost, and it can't be killed any more. There was once a man who lived in a house that was just swarming with ghosts, and he thought he would give them phosphorus paste, such as people give to mice to make them come out and die on the floor. So he put a lot of phosphorus paste near the ghost-holes, and in the middle of the night he woke up and saw three or four ghosts that were all shiny, like a magic-lantern picture. You see, the ghosts had eaten the phosphorus paste, and they were so thin that it shone right through them, and didn't hurt them the least bit.

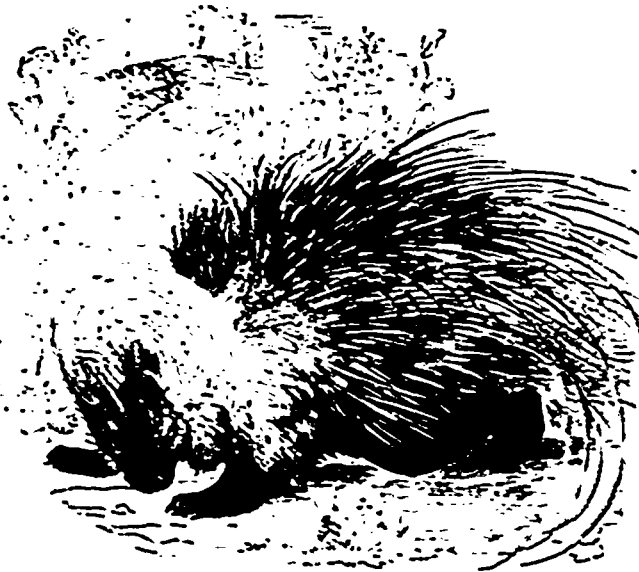
Ghosts can't be caught in traps any more than you could catch a piece of fog in a trap, and there is no use in setting cats to catch them, for a cat is awfully afraid of a ghost, and when she sees one, runs away and puts up her back and uses dreadful language. The only kind of animal that isn't afraid of ghosts is a Scotch terrier. Mr. Travers knew a man who was troubled with ghosts, and who bought a Scotch terrier to sit up with him at night for company. The very next night a tall, thin ghost came out, and the dog went for it, and got it by the small of the back and shook it. For about five minutes the man couldn't tell which was the ghost and which was the dog, for the two looked like a bundle of wool in a fog. After a while the dog felt sure the ghost was killed, so he dropped it on the floor and came up to the man wagging his tail; but the ghost sprang up and vanished through his hole without being any the worse for his shaking.

Mr. Travers says he thinks ghosts could be driven out of a house by sprinkling carbolic acid—which is something like my bad medicine—in their holes, but I know better. How would that hurt a ghost that was in another part of the wall where the carbolic acid couldn't touch him? When ghosts get into a house there is no way to get rid of them but to tear the house down. Once there was a house in England that was so full of ghosts that nobody could live in it, and the Duke who owned it couldn't rent it if he offered to pay a man to hire it. So one day he got angry and ordered it to be torn down.

About four hundred men with big clubs stood all around the house, which was a big castle, ready to hit the ghosts in case they should run. They found six ghosts' nests in that castle, most of them in the place between the ceiling and the floors of the upstairs rooms; but no sooner did a workman drive out a lot of ghosts than they disappeared, just as the flame of a match does when it goes out, and the men with clubs didn't hit a single one.

As I was saying, we have a ghost in our house. It lives in the wall close to the head of my bed, and makes a noise at night just as if it was creaking and needed to be oiled; and sometimes it sighs, just as Sue does when she has trouble with her young man. I told our cook about it, and she said she knew it was a ghost, and she don't dare to go into the room, but I'm not the least bit afraid.

I've found a little hole in the wall, just down by the floor, where the ghost comes out, only, of course, I can't see him when I am asleep. I'm going to settle that ghost in a way that will surprise him; but I shall have to put off telling about it until it's done, for I don't want anybody to know anything about it. When people find out that I've invented a way to get rid of ghosts, perhaps they will begin to think that I'm of some use, after all.



THE "FRETFUL" PORCUPINE.

THE "FRETFUL" PORCUPINE.

No doubt many readers of THE RURAL CANADIAN have seen the queer looking animal, whose picture is given above. The common porcupine is found in Canada, Africa, Tartary, Persia, India, and other parts of Europe.

The best known species is the Canada porcupine, about two and one-half feet long, weighing from twenty to thirty pounds; it appears larger than it really is from the length of the hair and spines; the fur is generally dark brown, soft, woolly, and grayish next the skin, coarse and bristly in some parts, six or seven inches long on the back, the coarse hair usually with dirty white points, giving to the whole a hoary tint; the spines, more or less hidden by the fur, and abundant on the upper surface of the head, body, and tail, are two or three inches long, white with dark points; the tail is about ten inches additional to the above length; the incisors deep orange. It is a very clumsy animal, with back much arched, snout thick and tumid, ears short and round, and tongue rough with scales. It is an excellent though a slow climber; it is not able to escape its enemies by flight, but cannot be attacked even by the largest carnivora with impunity; dogs, wolves, the lynx, and the cougar

have been known to die from the inflammation produced by its quills; these are loosely attached to the skin and barbed at the point, so that they easily penetrate, retain their hold, and tend continually to become more deeply inserted; when irritated it erects its quills, and by a quick lateral movement of the tail strikes its enemy, leaving the nose, mouth, and tongue beset with its darts; it has no power of shooting the quills. The food consists of vegetable substances, especially the inner bark and tender twigs of the elm, basswood, and hemlock; it seldom quits a tree while the bark is uneaten, except in cold weather, when it descends to sleep in a hollow stump or cave; as it kills the trees which it ascends, its depredations are often serious. The nest is made in a hollow tree, and the young, generally two, are born in April or May. It is almost as large as a beaver, and is eagerly hunted by the Indians, who eat the flesh, and use the quills to ornament their moccasins, belts, pouches, bags, baskets, and canoes, for which purpose they are often dyed with bright colours; it is very tenacious of life; it does not hibernate, as the European porcupine is said to do.

A BOY WHO USED HIS EYES.

I daresay all my young friends have seen a kettle boiling over, and watched the steam puffing out at the spout and lid. That is one of the commonest sights of household life. You may see it every afternoon about tea-time if you go into the kitchen. Well, you think there is nothing wonderful in that. You don't care to shut up your story-book and run into the kitchen to see the kettle. There was once a boy who would sit quite still by his aunt's old-fashioned grate for a long time, day after day, just watching the steaming kettle. Once when the boiling water lifted the lid he tried to force it down with a spoon, and scalded his arm with the steam. "James Watt," said his aunt, angrily, "what a foolish, idle boy you are! How can you waste so much time in this way over the kettle? Why don't you play like other boys? Run away." James walked slowly off, thinking all the while not about his scalded arm, nor his scolding aunt, but reflecting on the wonderful power of steam.

He was not wasting time by using his eyes and brain in this way. For his observations and reflections were the first step to an invention which opened a new era in the history of civilization. If any of you older boys have read that book called "Self Help," which tells the story of James Watt and many other boys who thought for and helped themselves, you will know which invention.

A WISE LITTLE GIRL.

Nellie lived in Herefordshire, England. Her father was a great lover of bees, and had a long row of straw-covered, old-fashioned bee-hives in his flower-garden. Near by was little Nellie's garden, in which she used to dig and rake and sow and plant at all times. One warm morning, dressed in her cool linen frock, with her big sun-bonnet on, she was hard at work in her border, and stood up a minute to rest her poor little back when, humming and buzzing, a whole swarm of bees settled in her sun-bonnet, all down the side of her face, and round her throat. If Nellie had stamped and yelled, and tried to beat them off, she would have been stung almost to death. But she just stood *right still*—never jumped or screamed—and the folks in the house came out *quietly* and hived the whole swarm. Not one of the bees had stung her. Presence of mind, courage and common sense are grand things for boys and girls to possess.

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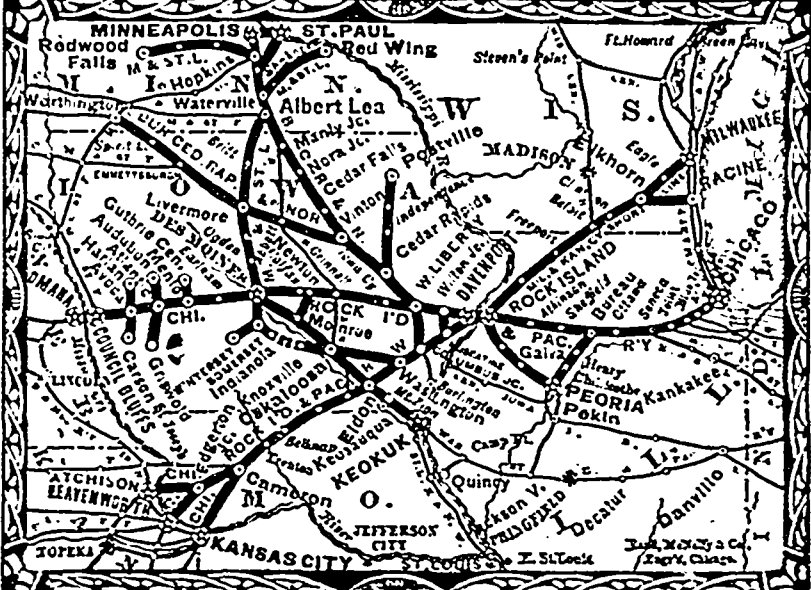
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